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Attorneys for Plaintiffs

IN THE SUPERIOR COURT OF THE STATE OF ARIZONA
IN AND FOR THE COUNTY OF MARICOPA

STATE OF ARIZONA, ex rel.
ROBERT K. CORBIN, Attorney General,
RANDOLPH WOOD, Director of
Arizona Department of Environmental
Quality,

Plaintiff,

vs.

MOTOROLA, INC., a Delaware
Corporation,

Defendant.

Civil Action No.

CONSENT ORDER

CV 89-16807

WHEREAS, the Plaintiff State of Arizona, ex rel., Robert
K. Corbin, the Arizona Attorney General and Randolph Wood,
Director, Arizona Department of Environmental Quality, filed a
Complaint alleging violations by the Defendant, Motorola, Inc., a
Delaware corporation doing business in Arizona, of A.R.S.

§ 49-281 et seq.

. . .

1 WHEREAS, Defendant acknowledges that it was duly served
2 with a copy of the summons and complaint and have been fully
3 advised of its rights in this matter and has waived same;

4 WHEREAS, Defendant further acknowledges that no promise
5 of any kind or nature whatsoever was made to induce Defendant to
6 enter into this Consent Order and that Defendant has done so
7 voluntarily;

8 WHEREAS, Defendant admits the jurisdiction of the Court
9 and that venue is proper in Maricopa County; and

10 WHEREAS, Defendant does not admit any of the allegations
11 or the complaint or liability for any violation of law therein,
12 but to settle this dispute arising from said complaint in this
13 action without litigation, Defendant has consented to the terms
14 and entry of this Consent Order and has agreed not to contest its
15 validity in any subsequent proceeding and the parties have moved
16 the court to enter same;

17
18 NOW THEREFORE, IT IS HEREBY ORDERED, ADJUDGED and
19 DECREED as follows:

20 1. The Court has jurisdiction over the subject matter
21 of this action pursuant to A.R.S. § 49-287. The Complaint states
22 a claim upon which relief can be granted against Defendant under
23 A.R.S. § 49-287.

24 2. The Court has personal jurisdiction over the
25 Defendant and venue is proper in this Court.

26 . . .

1 3. Except where a specific date is specified herein,
2 Defendant shall be bound by the terms and conditions of this
3 Consent Order upon its entry of the Court. This Consent Order
4 specifically incorporates the administrative Consent Order
5 entered into by and between the parties hereto, dated June 20, 1989
6 a copy of which is attached hereto and made a part hereof. This
7 Consent Order shall be entitled the Motorola 52nd St. Consent
8 Order.

9
10 SEVERABILITY

11
12 1. If any provision of this Consent Order or
13 application thereof to any person or circumstance is declared by
14 this or any other Court to be invalid or unenforceable, the
15 invalidity does not affect other provisions or applications of
16 this Consent Order which can be given effect without the invalid
17 provision or application. To this end, the provisions of the
18 Consent Order are severable.

19
20 RETENTION OF JURISDICTION

21
22 1. The Court shall retain jurisdiction for the purposes
23 of interpreting, implementing, modifying and enforcing the terms
24 and conditions of this Consent Order, to the extent and in the
25 manner set forth within the Consent Order itself, in order to
26

. . .

1 resolve disputes arising hereunder and to take any action
2 necessary or appropriate for its construction or execution.
3

4 DATED this 24 day of JULY, 1989.
5

6 
7 _____
8 Judge of the Superior Court

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CONSENT TO JUDGMENT

1. Defendant Motorola, Inc., a Delaware corporation doing business in Arizona hereby acknowledges that it has read the foregoing Consent Order in its entirety and agrees with the statements made therein, consents to its entry by the Court and agrees to abide by its terms.

DATED this 20th day of June, 1989.

MOTOROLA, INC.

BY: Gordon Chilton
Gordon Chilton, Senior Vice
President and General Manager
Discrete and Special
Technologies Group

APPROVED AS TO FORM AND
CONTENT:

ROBERT K. CORBIN
Attorney General

By: Steven J. Silver
Steven J. Silver
Assistant Attorney General
1275 West Washington
Phoenix, AZ 85007
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ARIZONA DEPARTMENT OF ENVIRONMENTAL QUALITY

By: Randolph Wood
Randolph Wood
Director of AZ Department of Environmental Quality

By: James Coffee
James Coffee
Attorney for Motorola, Inc.

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IN THE SUPERIOR COURT OF THE STATE OF ARIZONA
IN AND FOR THE COUNTY OF MARICOPA

STATE OF ARIZONA, ex rel.
ROBERT K. CORBIN, Attorney General
RANDOLPH WOOD, Director of
Arizona Department of Environmental
Quality

Plaintiff,

-vs-

MOTOROLA, INC., a Delaware
Corporation

Defendant

Civil Action No.

MOTOROLA 52ND STREET
CONSENT ORDER

CV 89-16807

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6 WHEREAS, the State of Arizona, through Randolph Wood, Director of the
7 Arizona Department of Environmental Quality (herein Arizona), or his
8 designee has the authority and has hereby ordered and the parties agree
9 that in this matter, pursuant to Arizona Revised Statutes § 49-104 and 49-
10 287 A through K, Arizona may require Motorola, Inc., a corporation of the
11 state of Delaware (herein Motorola) to perform remedial action and to pay
12 all reasonable and necessary response costs that have been, and/or will be
13 incurred by Arizona in response to releases and threatened releases of
14 hazardous substances from a facility known as Motorola, Discrete and
15 Special Technologies Group, 5005 East McDowell Road, Phoenix, Arizona
16 85008.

17
18 WHEREAS, Arizona alleges that releases of organic and inorganic hazardous
19 substances, including but not limited to trichloroethylene (TCE) and
20 1,1,1-trichloroethane (TCA), have occurred at this facility and that
21 Motorola is a responsible party.

22
23 WHEREAS, Motorola was listed as a RCRA related site in 1984, and again on
24 update no. 5 of the National Priorities List (NPL). However, on update
25 no. 7 (June 17, 1988), Motorola was determined as not being subject to
26 RCRA provisions and therefore met NPL Listing Criteria as a proposed NPL
27 Site.
28

1 WHEREAS, pursuant to A.R.S. § 49-287 A through K, Motorola and Arizona
2 stipulate and agree that Arizona has the authority to enter an order
3 requiring abatement of a release or threat of a release of hazardous
4 substances, and that such order upon entry would become final and
5 enforceable in Maricopa County Superior Court.

6
7 WHEREAS, Motorola and Arizona have stipulated and agreed to the making and
8 entry of this Consent Order (hereinafter "Order" or "Consent Order") prior
9 to the taking of any testimony, without any admission of liability or
10 fault as to any allegation or matter arising out of this Consent Order of
11 any party or otherwise, and that Motorola waives its right to an
12 administrative hearing under A.R.S. § 49-287 E.

13
14 WHEREAS, Motorola and Arizona agree that settlement of this matter and
15 entry of this Consent Order is made in good faith, in an effort to avoid
16 further expensive and protracted litigation, without any admission as to
17 total liability for any purpose.

18
19 WHEREAS, each undersigned representative of the parties to the Consent
20 Order certifies that he or she is fully authorized to enter into the terms
21 and conditions of the Order and to execute and legally bind such party to
22 the terms and conditions memorialized in this document.

23
24 NOW THEREFORE, it is ORDERED, ADJUDGED, AND DECREED as follows:
25
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1 1.0 JURISDICTION

2

3 Arizona has jurisdiction over the subject matter of this action and
4 Motorola pursuant to A.R.S. §49-104 and §49-287 A through K.

5

6 2.0 PARTIES

7

8 The parties to this Consent Order are Motorola, Inc., a corporation of the
9 State of Delaware and/or its successors and/or assigns and the State of
10 Arizona through Randolph Wood, Director, Arizona Department of
11 Environmental Quality.

12

13 3.0 BINDING EFFECT

14

15 3.1 This Consent Order shall apply to and be binding upon the
16 signatories, their agents, their successors, and assigns. Motorola
17 shall provide a copy of this Consent Order, as lodged, and all
18 relevant additions to the Consent Order, as appropriate, to its
19 Prime Contractor, retained to implement the Remedial Action Plan
20 (RAP) and perform the Remedial Design/Remedial Action (the Work)
21 contemplated by this Order and shall condition any contract for the
22 Work on compliance with this Consent Order.

23

24 3.2 Motorola shall implement the Work (as described in Appendix C), as
25 that term is defined in this Consent Order, in compliance with the
26 terms and conditions of this Order.

27

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1 3.3 All appendices become an integral and enforceable part of this
2 Order.

3
4 4.0 DEFINITIONS

5
6 The following terms used in this Consent Order are defined as follows:

7
8 4.1 "Administrator" means the Administrator of the United States
9 Environmental Protection Agency.

10
11 4.2 "Aquifer" means a geologic unit that contains sufficient saturated
12 permeable material to yield usable quantities of water.

13
14 4.3 "Best management practices" means those methods, measures or
15 practices to prevent or reduce discharges and include structural
16 and nonstructural controls and operation and maintenance
17 procedures. Best management practices may be applied before,
18 during and after discharges to reduce or eliminate the introduction
19 of pollutants into receiving waters. Economic, institutional and
20 technical factors shall be considered in developing best management
21 practices.

22
23 4.4 "CERCLA" means the Comprehensive Environmental Response,
24 Compensation, and Liability Act of 1980, as amended (42 United
25 States Code §§ 9601 through 9657), known hereafter as "Superfund".

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1 4.5 "Clean Water Act" means the Federal Water Pollution Control Act
2 Amendments of 1972, as amended (P.L. 92-500; 86 Stat. 816; 33
3 United States Code §§ 1251 through 1376).

4
5 4.6 "Contaminants" means hazardous substances, pollutants, and/or toxic
6 pollutants.

7
8 4.7 "Department" means the Arizona Department of Environmental Quality.
9

10 4.8 "Director" means the Director of the Arizona Department of
11 Environmental Quality. The terms Department and Director are
12 interchangeable for purposes of this Order.

13
14 4.9 "Discharge" means the direct or indirect addition of any pollutant
15 to the waters of the state from a facility. For purposes of the
16 aquifer protection permit program prescribed by A.R.S. § 49-241 et
17 seq., discharge means the addition of a pollutant from a facility
18 either directly to an aquifer or to the land surface or the vadose
19 zone in such a manner that there is a reasonable probability that
20 the pollutant will reach an aquifer.

21
22 4.10 "Dispose" means the deposit, injection, dumping, spilling, leaking
23 or placing of any pollutant into or on any land or water so that
24 the pollutant or any constituent of the pollutant may enter the
25 environment or be discharged into any waters, including aquifers.
26
27
28

1 4.11 "Environment" means navigable waters, any other surface waters,
2 groundwater, drinking water supply, land surface or subsurface
3 strata or ambient air, within or bordering on this state.

4
5 4.12 "Facility" means any land, building, installation, structure,
6 equipment, device, conveyance, area, source, activity or practice
7 from which there is, or with reasonable probability may be, a
8 discharge.

9
10 4.13 "Fund" means the Water Quality Assurance Revolving Fund (WQARF)
11 established by A.R.S. § 49-282.

12
13 4.14 "Groundwater" means water under the surface of the earth in the
14 zone of saturation regardless of the geologic structure in which it
15 is standing or moving. Groundwater does not include water flowing
16 in underground streams with ascertainable beds and banks.

17
18 4.15 "Hazardous substance" means:

19
20 4.15.1 Any substance designated pursuant to §§ 311(b)(2)(a) and 307(a) of
21 the Clean Water Act.

22
23 4.15.2 Any element, compound, mixture, solution or substance designated
24 pursuant to § 102 CERCLA.

25
26 4.15.3 Any hazardous waste having the characteristics identified under or
27 listed pursuant to Arizona Revised Statutes § 49-922.

1 4.15.4 Any hazardous air pollutant listed under § 112 of the Federal Clean
2 Air Act (42 United States Code § 7412).

3
4 4.15.5 Any imminently hazardous chemical substance or mixture with respect
5 to which the Administrator has taken action pursuant to § 7 of the
6 Federal Toxic Substances Control Act (15 United States Code §
7 2606).

8
9 4.15.6 Any substance which the Director, by rule, either designates as a
10 hazardous substance following the designation of the substance by
11 the Administrator under the authority described in subdivisions (1)
12 through (5) of this paragraph or designates as a hazardous
13 substance on the basis of a determination that such substance
14 represents an imminent and substantial endangerment to public
15 health.

16
17 4.16 "Navigable waters" means the water of the United States as defined
18 by § 502(7) of the Clean Water Act (33 United States Code §
19 1362(7)).

20
21 4.17 "1988 Letter of Determination (1988 LOD)" means the Letter of
22 Determination for the Site issued by the Department documenting the
23 reason for approving the remedial action plan. The LOD, issued on
24 September 27, 1988, is attached hereto as Appendix A.

25
26 4.18 "Nonpoint source" means any conveyance which is not a point source
27 from which pollutants are or may be discharged to navigable waters.

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1 4.19 "Off-facility" for the purposes of the OU means the area west of
2 the facility boundaries extending to the east bank of Old Arizona
3 Crosscut Canal as shown in Appendix B, Exhibit A.

4
5 4.20 "On-facility" means within the facility boundaries as shown in
6 Appendix B, Exhibit B.

7
8 4.21 "Operable Unit (OU)" means but is not limited to the portion of the
9 remedy for the site as defined by the Work, consisting of a
10 discrete action that comprises an incremental step(s) toward a
11 final remedy and is consistent with objectives of the final remedy.

12
13 4.22 "Permit" means a written authorization issued by the Department or
14 any other appropriate governmental agency.

15
16 4.23 "Point source" means any discernible, confined and discrete
17 conveyance, including, but not limited to, any pipe, ditch,
18 channel, tunnel, conduit, well, discrete fissure, container,
19 rolling stock, concentrated animal feeding operation or vessel or
20 other floating craft from which pollutants are or may be
21 discharged.

22
23 4.24 "Pollutant" means fluids, contaminants, toxic wastes, toxic
24 pollutants, dredged spoil, solid waste, substances and chemicals,
25 pesticides, herbicides, fertilizers and other agricultural
26 chemicals, incinerator residue, sewage, garbage, sewage sludge,
27 munitions, petroleum products, chemical wastes, biological

1 materials, radioactive materials, heat, wrecked or discarded
2 equipment, rock, sand, cellar dirt and mining, industrial,
3 municipal and agricultural wastes or any other liquid, solid,
4 gaseous or hazardous substances.

5
6 4.25 "Release" means any spilling, leaking, pumping, pouring, emitting,
7 emptying, discharging, injecting, escaping, leaching, dumping or
8 disposing into the environment, but excludes:

9
10 4.25.1 Any release which results in exposure to persons solely within a
11 workplace, with respect to a claim which such persons may assert
12 against the employer of such persons.

13
14 4.25.2 Emissions from the engine exhaust of a motor vehicle, rolling
15 stock, aircraft, vessel or pipeline pumping station engine.

16
17 4.25.3 Release of source, by-product or special nuclear material, as those
18 terms are defined in the Atomic Energy Act § 30-651, resulting from
19 the operation of a production or utilization facility as defined in
20 the Atomic Energy Act of 1954, as amended (68 Stat.919; 42 U.S.C.A.
21 § 2011 et seq.), which is subject to the regulatory authority of
22 the United States Nuclear Regulatory Commission as specified in
23 that act, and the agreement, dated March 30, 1967, entered into
24 between the governor of this state and the United States Atomic
25 Energy Commission pursuant to § 30-656 and § 264 of the Atomic
26 Energy Act of 1954, as amended.

1 4.25.4 The normal application of fertilizer.
2

3 4.26 "Remedial actions" means those actions the director determines are
4 reasonable and necessary in the event of the release or threat of
5 release of hazardous substances into the environment such that the
6 waters of the state are or may be affected, such actions as may be
7 necessary to monitor, assess and evaluate such release or threat of
8 release, the disposal of removed material or taking such other
9 actions as may be necessary to prevent, minimize or mitigate damage
10 to the public health or welfare or to the waters of the state.
11 Remedial actions may include providing an alternative drinking
12 water supply.
13

14 4.27 "Safe Drinking Water Act" means the Federal Safe Drinking Water
15 Act, as amended (P.L. 93-523; 88 Stat. 1660; 95-190; 91 Stat.1393;
16 42 U.S.C.A. § 201, 300f to 300j-9).
17

18 4.28 "Site" means the total area projected in three dimensions which has
19 been or may be affected by a release or a threatened release of a
20 hazardous substance.
21

22 4.29 "Standards" means water quality standards, pretreatment standards
23 and toxicity standards established pursuant to A.R.S. §49-201 et
24 seq.
25

26 4.30 "Standards of performance" means performance standards, design
27 standards, best management practices, technologically based
28

standards and other standards, limitations or restrictions established by the Director by rule or by permit condition.

4.31 "Toxic pollutant" means a substance that will cause significant adverse reactions as a result of exposure. Significant adverse reactions are reactions that may indicate a tendency of a substance or mixture to cause long lasting or irreversible damage to human health.

4.32 "Vadose zone" means the zone between the ground surface and the top of the zone of saturation.

4.33 "Water Quality Assurance Revolving Fund (WQARF)" means that fund as defined in A.R.S. § 49-282.

4.34 "Waters of the state" means all waters within the jurisdiction of this State including all perennial or intermittent streams, lakes, ponds, impounding reservoirs, marshes, watercourses, waterways, wells, aquifers, springs, irrigation systems, drainage systems and all other bodies or accumulations of surface, underground, natural, artificial, public or private water situated wholly or partly in or bordering the State.

4.35 "Well" means a bored, drilled or driven shaft, pit or hole whose depth is greater than its largest surface dimension.

1 4.36 "Work" means the design and construction of the groundwater
2 extraction, collection, treatment, and plant site reuse systems and
3 all other tasks to be performed by Motorola pursuant to Appendix C
4 of this Consent Order, as may be modified pursuant to the
5 provisions of this Consent Order, and any schedules or plans
6 required to be submitted pursuant thereto.

7
8 4.37 "Zone of capture" means the portion of the aquifer maintained by
9 pumping or other hydraulic means, such that all flows within the
10 zone are inwardly directed.

11
12 5.0 PURPOSE

13
14 The purpose of this Consent Order is to serve the public interest by
15 protecting the public health, welfare, and the environment from releases
16 and threatened releases of hazardous substances at the Site by
17 implementation of Work in the form of an Operable Unit (OU). Motorola and
18 Arizona recognize that the OU does not constitute the final remedy for the
19 Site though it is consistent with and constitutes an important part of the
20 remedy, and that the final remedy will only be determined after completion
21 of a Final Remedial Investigation/Feasibility Study (RI/FS) and execution
22 by Arizona of a Letter of Determination which determines that final
23 remedy.

24
25 The OU is intended to contain and control the migration and level of
26 contaminants in the groundwater through implementation of the Work by
27
28

Motorola. This OU shall be conducted as described in the 1988 LOD and Appendix C (Work to be performed) of this Consent Order.

6.0 OBLIGATIONS FOR THE WORK

6.1 Motorola shall finance and perform the Work as defined by this Consent Order. When submitting work plans as part of such Work, Motorola may propose to use, or to incorporate, work it has already conducted. Work already completed and approved by Arizona toward development and implementation of the OU is acceptable to Arizona.

6.2 Notwithstanding any approvals which may be granted by Arizona or other governmental entities and in accordance with the Arizona Constitution and with the provisions of A.R.S. 12-820.02(5), the parties agree that no warranty of any kind is provided by Arizona as to the efficacy of the Work.

6.3 Motorola shall design, implement, and complete the work in accordance with Titles 45 and 49 of the Arizona Revised Statutes and applicable rules and regulations as set forth in the Arizona Administrative Code that are applicable to any activity undertaken pursuant to this Consent Order, and also in accordance with the standards, specifications and schedule of completion set forth in or approved by Arizona pursuant to Appendix C (Work to be performed) of this Consent Order.

1 6.4 Motorola and Arizona shall each appoint a representative (Project
2 Coordinator) in accordance with Appendix C.

3
4 6.5 Assumption of Work

5
6 6.5.1 In the event Arizona determines that Motorola has failed to
7 implement and/or complete a portion(s) of the work as set forth in
8 Appendix C of this Consent Order in a timely manner, or in a manner
9 that is not in accordance with Title 45 and/or 49 of the Arizona
10 Revised Statutes and applicable rules and regulations as set forth
11 in the Arizona Administrative Code, Arizona may assume the
12 performance of any and/or all portions of the Work as Arizona
13 determines to be necessary. Prior to such assumption, Arizona will
14 provide Motorola's Project Coordinator with fifteen (15) days
15 advance notice of intent to perform a portion of or all of the
16 Work. During the fifteen day period of time, Arizona shall meet
17 with Motorola's Project Coordinator and attempt to resolve the
18 issues of concern. If at the end of the fifteen day period, Arizona
19 determines that its concerns will be resolved satisfactorily,
20 Arizona shall withdraw its advance notice of intent to perform a
21 portion or all of the work.

22
23 6.5.2 If, at the end of those fifteen days, Arizona determines that
24 Motorola has failed to implement and/or complete a portion(s) of
25 the Work requirements of this Consent Order in a timely manner, or
26 in a manner that is not consistent with Title 45 and/or 49 of the
27 Arizona Revised Statutes and applicable rules and regulations as
28

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1 set forth in the Arizona Administrative Code and Arizona instructs
2 Motorola to cure the defect, Motorola may invoke the dispute
3 resolution provisions of this Consent Order. If the dispute
4 resolution process determines that Arizona should not have
5 determined to assume the Work pursuant to this Paragraph, Motorola
6 may resume the Work in a timely manner. Invoking dispute
7 resolution does not stay Arizona's right to perform the Work. If,
8 on the other hand, at the end of the fifteen day period, Arizona
9 determines that its concerns will be resolved satisfactorily,
10 Arizona shall withdraw its advance notice of intent to perform a
11 portion or all of the Work.
12

13 6.5.3 In the event Arizona assumes the performance of a portion or all of
14 the Work, any liability of Motorola will be judged pursuant to
15 A.R.S. § 49-285, § 49-287 D, § 49-287 H and 42 USC 9601-9657 as
16 amended. If Motorola invokes dispute resolution, its liability is
17 stayed until the completion of dispute resolution proceedings.
18

19 6.5.4 If the dispute resolution proceedings result in a determination
20 that it was appropriate under this Paragraph for Arizona to have
21 assumed the performance of a portion or all of the Work, then the
22 Motorola liability will be judged pursuant to ARS § 49-285, § 49-
23 287 D, 49-287 H, and 42 USC 9601-9657.
24

25 6.5.5 If the dispute resolution proceedings determines that it was not
26 appropriate for Arizona to have assumed performance of a portion or
27 all of the Work, Motorola may have an additional reasonable length
28

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1 of time as agreed to by Motorola and Arizona to resume the
2 performance of the Work.

3
4 6.5.6 If Arizona performs portions of the Work in accordance with this
5 Paragraph 6.0, Motorola shall reimburse Arizona in an amount at
6 least equal to and not more than three times the costs of doing
7 such Work within sixty (60) calendar days of receipt of demand for
8 payment of such costs. Motorola reserves the right to contest,
9 through the dispute resolution process set out in Paragraph 18.0,
10 such costs as not actually incurred or as incurred inconsistent
11 with A.R.S. § 49-282. Any demand for payment made by Arizona
12 pursuant to this provision shall include itemized cost
13 documentation that verifies that the claimed costs were incurred
14 and that the amount of the demand was properly calculated. Such
15 claimed costs shall also be subject to audit by Motorola or its
16 designee.

17
18 6.5.7 If the dispute resolution proceedings result in a determination
19 that it was inappropriate under this Paragraph for Arizona to have
20 assumed the performance of a portion or all of the Work, Motorola
21 shall not be liable to Arizona for the Work performed.

22
23 6.6 All activities undertaken by Motorola pursuant to this Consent
24 Order shall be undertaken in accordance with the requirements of
25 all applicable state and federal laws and/or regulations. Arizona
26 has determined that the obligations and procedures authorized under
27
28

1 this Consent Order are consistent with its authority under
2 applicable law.

3
4 7.0 PERMITS FOR THE WORK
5

6 7.1 The implementation of the Order may require the issuance of
7 governmental permits, authorizations or orders (hereinafter
8 referred to as "permits") issued or administered by Arizona, other
9 State agencies, or other governmental bodies. This Order is based
10 upon the expectation that all necessary permits will be obtained
11 and be consistent with the remedial actions required by this Order.
12

13 7.2 Motorola shall notify Arizona of all permits required by agencies
14 other than Arizona Department of Environmental Quality which are
15 needed to implement the requirements of this Order and the time
16 necessary to obtain the permits and compliance with the terms of
17 such permits as soon as Motorola becomes aware of the need for the
18 permits. If Motorola's reasonable efforts have failed to obtain a
19 necessary permit, the Arizona Department of Environmental Quality
20 shall provide assistance in doing so.
21

22 7.3 If a permit is not issued, is issued or is renewed in a manner
23 which is materially inconsistent with the requirements of the
24 approved RAP, or if a governmental unit takes action against
25 Motorola to enforce a law, Motorola shall notify Arizona of its
26 intention to propose modifications of the RAP. Notification by
27 Motorola of its intention to propose modifications shall be
28

1 submitted no later than seven (7) calendar days after receipt by
2 Motorola of notification that:

3
4 7.3.1 A permit has not been issued, has been issued or has been renewed
5 in a manner which is materially inconsistent with the requirements
6 of the approved RAP; or

7
8 7.3.2 A governmental unit has commenced an action against Motorola to
9 enforce a permit or law.

10
11 7.4 Within thirty (30) days from the date it submits its notice of
12 intention, Motorola shall submit to Arizona its proposed
13 modifications to the RAP with an explanation of its reasons in
14 support thereof.

15
16 7.5 Arizona shall review and approve, disapprove or modify Motorola's
17 proposed modifications to the RAP in accordance with Paragraph 21.0
18 of this Order. If Motorola submits proposed modifications prior to
19 a final determination either on a permit needed to implement this
20 Order or on a decision that Motorola has violated a law in
21 implementation of this Order, Arizona may elect to delay review of
22 the proposed modifications until after such final determination is
23 made and any judicial appeal of the final determination has been
24 concluded. If Arizona elects to delay review, Motorola shall
25 continue to implement those portions of this Order and the RAP
26 which Arizona determines can reasonably be implemented pending
27 final determination or final resolution of any judicial
28

1 proceedings. Motorola may invoke the dispute resolution process
2 of Paragraph 18.0 of this Order concerning a request for
3 modification pursuant to this Paragraph 7.0.
4

5 8.0 REPORTING AND APPROVALS/DISAPPROVALS
6

7 8.1 Progress Reports
8

9 8.1.1 Motorola shall provide in writing, annual summary progress reports
10 and quarterly progress reports to Arizona. After one year of
11 routine operation, progress reports will be due semi-annually.
12 These progress reports shall describe all actions taken to comply
13 with this Consent Order, including a general description of the
14 Work activities commenced or completed during the reporting period,
15 Work activities projected to be commenced or completed during the
16 next reporting period, and any problems that have been encountered
17 or are anticipated by Motorola in commencing or completing the Work
18 activities. These progress reports shall be submitted to Arizona
19 in accordance with the schedule in Paragraph 12.0 and Appendix C.
20

21 8.1.2 If Motorola fails to submit any progress report in accordance with
22 the schedule set forth above, then Motorola shall be considered to
23 be in violation of this Consent Order.
24

25 8.2 Reports, Plans, Specifications, Permits and Other Items
26
27
28

1 8.2.1 Any reports, plans, specifications (including treatment, discharge,
2 or emission limits), schedules, appendices, and attachments
3 required or established by this Consent Order and/or any documents
4 required by the Work are, upon approval by Arizona, incorporated
5 into this Consent Order. Any reports, plans, specifications
6 (including treatment, discharge, or emission limits), schedules,
7 appendices, or attachments deemed to contain insufficient
8 information shall be considered a failure to comply with this
9 Consent Order and subject to the provisions of Subparagraph 8.2.3.

10
11 8.2.2 Any disapprovals by Arizona shall be in writing and shall include
12 an explanation by Arizona of why the plan, report, or item is being
13 disapproved.

14
15 8.2.3 If Arizona disapproves any plans or reports (other than progress
16 reports), or other items required to be submitted for approval
17 pursuant to Appendix C (Work to be Performed), or Paragraph 11.0
18 (Site Account), Motorola shall have ten (10) working days from the
19 receipt of such disapproval to correct any deficiencies and
20 resubmit the plan, report, or item for Arizona's approval.

21
22 8.2.4 In attempting to correct any deficiency as required by Subparagraph
23 8.2.3, Motorola shall address each of Arizona's comments and
24 resubmit to Arizona the previously disapproved plan, report, or
25 item with the required changes within the ten (10) day deadline
26 established by that Subparagraph, except that the period for
27
28

1 Motorola's response may be extended by mutual agreement of the
2 parties.

3
4 8.2.5 If any plan, report, or item is deficient after resubmission, then
5 Motorola shall be deemed to be in violation of this Consent
6 Order. Any such determination of non-compliance with which
7 Motorola disagrees shall be deemed a dispute and subject to the
8 provisions of Paragraph 18.0 (Dispute Resolution). In the event
9 that the deficiency in the plan, report or other item is corrected
10 by any resubmission permitted under Subparagraph 8.2.3, then
11 Motorola shall not be deemed to be in violation of this Consent
12 Order.

13
14 9.0 ACCESS

15
16 9.1 The parties recognize that access to or easement over property on-
17 facility and/or off-facility may be required for the proper and
18 complete performance of this Consent Order. If the property is on-
19 facility but is no longer owned or controlled by Motorola, then
20 Motorola shall obtain access agreements and/or easements over such
21 property from the present owners or those persons who have control
22 of such property. To the extent that the property is off-facility
23 and is not owned or controlled by Motorola, then Motorola shall use
24 its best efforts to obtain access agreements and/or easements over
25 such property from the owners or those persons who have control of
26 such property within sixty (60) calendar days of the signing of
27 this Consent Order. If not able to obtain access agreements and/or
28

4

1 easements over such properties within the sixty (60) day period,
2 Motorola must notify Arizona as soon as possible but no later than
3 the lapse of the sixty (60) calendar day period. Access agreements
4 shall provide reasonable access to Motorola and Arizona and their
5 authorized representatives.

6
7 If necessary, Arizona agrees to use its best efforts, consistent
8 with its legal authority, to assist Motorola in obtaining such
9 access. In the event Arizona exercises its access authority under
10 A.R.S. § 49-287 K in order to obtain access for the performance of
11 this Consent Order, Motorola shall reimburse Arizona for costs
12 incurred in the exercise of such powers.

13
14 9.2 Upon entry of this Order with the court, Motorola shall assure that
15 Motorola, Arizona, and their representatives, including
16 contractor(s) shall have access at all reasonable times to any
17 location upon which Motorola or its contractor(s) is performing
18 work pursuant to the Consent Order. In the event Motorola
19 transfers any or all of its property located within the boundaries
20 of the Site to a third party after entry of this Order Motorola
21 shall assure that the instrument effecting the conveyance or
22 transfer of title contains a copy of this Consent Order, and the
23 listing of the Site on the Proposed NPL; and that such conveyance
24 provides for a recordable easement or right of access for Arizona
25 from the third party. Right of access shall be for the purposes
26 set forth in Paragraph 9.3.

1 9.3 Access shall be for purposes of conducting any activity authorized
2 by this Consent Order, including, but not limited to:

3
4 9.3.1 Monitoring the progress of activities taking place;

5
6 9.3.2 Verifying any data or information submitted to Arizona.

7
8 9.3.3 Conducting investigations relating to contamination at or near the
9 Site;

10
11 9.3.4 Obtaining samples at or near the Site;

12
13 9.3.5 Inspecting and copying records, operating logs, contracts, or other
14 documents utilized to assess Motorola's compliance with the Consent
15 Order; and

16
17 9.3.6 Any other action necessary to implement this Order.

18
19 10.0 ASSURANCE OF ABILITY TO COMPLETE WORK

20
21 Motorola shall demonstrate its ability to complete the Work and to pay all
22 claims that arise from the performance of the Work by obtaining, and
23 presenting to Arizona for approval within thirty (30) calendar days after
24 entry of this Order, one of the following items: 1) performance bond;
25 2) letter of credit; or 3) letter of guarantee by a third party. In
26 lieu of any of the three items listed above, Motorola may present to
27 Arizona within thirty (30) calendar days after the date of entry of this
28

1 Consent Order and annually thereafter a copy of its annual report
2 reflecting that Motorola has sufficient assets to make it unnecessary to
3 require additional assurances. If Arizona determines the financial
4 assurances as reflected by the annual report to be inadequate, Arizona
5 shall notify Motorola in writing of the basis of its determination and
6 request one of the above listed items. Motorola may invoke dispute
7 resolution to resolve a dispute over financial assurances. However,
8 Motorola shall obtain one of the three financial instruments listed above
9 pending resolution of the dispute. If the dispute resolution process
10 determines that Motorola's financial assurances are inadequate, Motorola
11 shall obtain one of the three other financial instruments listed above
12 within thirty (30) calendar days of such determination.

13
14 Motorola and/or its successors and/or assigns agree, covenant and
15 guarantee that they will pay all of the costs associated with the design,
16 construction, implementation, operation, maintenance, sampling,
17 monitoring, termination, and/or other activities associated with the
18 Operable Unit.

19
20 11.0 SITE ACCOUNT

21
22 Motorola shall maintain a segregated account dedicated to funding
23 Motorola's obligations pursuant to this Consent Order. Starting ten (10)
24 days after entry of this Consent Order with the Court, Motorola shall
25 quarterly submit an account statement to Arizona demonstrating that the
26 account is funded adequately to ensure performance of Motorola's Consent
27 Order obligations for the following quarter.

1 12.0 SUBMISSION OF DOCUMENTS, SAMPLING, AND ANALYSIS

2
3 12.1 Motorola shall submit a Quarterly Progress Report during the
4 design/construction period and the first year of operation. The
5 first Quarterly Progress Report shall be submitted within forty-
6 five (45) calendar days after the entry of this Consent Order.

7
8 12.2 Motorola shall submit a Quarterly Progress Report by January 30,
9 April 30, July 30, and October 30 for the first year after
10 startup. Thereafter Progress Reports will be due semiannually on
11 January 30 and July 30 of each year. Progress Reports shall
12 consist of:

13
14 12.2.1 Submittal and interpretation of data generated since the last
15 submittal.

16
17 12.2.2 Information that demonstrates that Motorola is complying with
18 Paragraph 6.0 and Appendix C of this Consent Order.

19
20 12.2.3 Schedule of Quarterly Progress Reports.

21
22 12.2.4 Schedule forecast.

23
24 12.2.5 Site Account statement as described in Paragraph 11.0.

1 12.2.6 Forecast of future project costs.

2
3 Arizona reserves the right to require more frequent Progress
4 Reports if circumstances warrant the need for such action.
5

6 12.3 Motorola shall submit an Annual Summary Report by January 30 of
7 each year summarizing activities conducted during the previous year
8 pursuant to this Consent Order. The Annual Summary Report will
9 consist of:

10
11 12.3.1 An assessment of the overall effectiveness of the Operable Unit
12 including water quality, water levels, and soil gas contaminant
13 concentrations. Motorola shall determine if the groundwater
14 extraction system has had any effect on the water quality of the
15 aquifer and shall include modelling diagrams where appropriate. If
16 the assessment fails to show that the Operable Unit is being
17 effective, Motorola shall also include a proposal for modification
18 of the activities conducted under the Consent Order.
19

20 12.3.2 A report on the progress of work conducted pursuant to this Consent
21 Order during the previous calendar year.
22

23 12.3.3 An updated schedule.
24

25 12.3.4 A financial statement for the Operable Unit showing: (1) total
26 expenditures, (2) a cost breakdown, (3) the site account balance,
27 and (4) a forecast of future costs.
28

1 12.4 Arizona employees and Arizona's authorized representatives shall
2 have the right, upon request, to take splits of any samples
3 obtained by Motorola or anyone acting on Motorola's behalf in the
4 implementation of the Work. Motorola shall also have the right
5 upon request to obtain splits of samples taken independently by
6 Arizona or its authorized representatives.
7

8 12.5 During the design, construction, and start-up activities, Motorola
9 shall notify Arizona seven (7) days prior to any unscheduled
10 sampling conducted by Motorola or anyone acting on its behalf. Any
11 portion of any sample remaining after analysis must be retained by
12 the laboratory for thirty (30) days after receipt of analytical
13 results by Arizona and Arizona shall have an opportunity, upon
14 request, to take possession of all or a portion of such sample.
15

16 Motorola need not provide Arizona with 7-day notice of routine
17 scheduled sampling relating to the routine operation of the
18 groundwater extraction and treatment system. Prior to commencement
19 of the routine operation of the treatment system, however, Motorola
20 shall provide Arizona with a schedule for all routine sampling
21 relating to the operation of the groundwater extraction and
22 treatment system. Motorola shall notify Arizona seven (7) days in
23 advance of any changes in the routine sampling schedule. Motorola
24 need not provide Arizona with advance notices of changes in the
25 routine treatment system sampling as a result of unexpected
26 conditions. Motorola shall, however, notify Arizona within two (2)
27 days following any such occurrence and shall provide Arizona with
28

1 the results of analysis of such sampling when the results become
2 available.

3
4 12.6 All data collected, factual information, and documents submitted by
5 Motorola to Arizona pursuant to this Consent Order shall be subject
6 to public inspection. Motorola shall not assert a claim of
7 confidentiality regarding any hydrogeological or chemical data, any
8 data submitted in support of a remedial proposal, or any other
9 scientific or engineering data. Motorola may assert business
10 confidentiality claims covering part or all of the information
11 provided in connection with this Consent Order only to the extent
12 allowed in accordance with A.R.S. § 49-205. Any such claim shall
13 be reviewed by Arizona and if determined to be confidential will be
14 afforded protection provided by A.R.S. § 49-205.

15
16 Documents which are asserted to be attorney work product or subject
17 to privilege under law are not subject to inspection or copying
18 under this Consent Order provided that, upon request, Motorola
19 shall provide Arizona with an identification of the title and
20 subject matter of each document for which a privilege is asserted,
21 and an explanation as to why the privilege is applicable to the
22 document or portions thereof. Motorola may invoke Dispute
23 Resolution to resolve a dispute over confidentiality.

1 13.0 RETENTION OF RECORDS

2

3 Motorola shall preserve and retain all records and documents now in its
4 possession or control that relate in any manner to this Consent Order
5 regardless of any document retention policy to the contrary, for no less
6 than ten (10) years after the completion of all work as described in
7 Appendix C or termination of this Consent Order, whichever is later.

8

9 Upon completion of the Work or termination as per Paragraph 25.0 of this
10 Consent Order, Motorola shall preserve, and shall instruct the contractor,
11 the contractor's subcontractors, and anyone else acting on Motorola's
12 behalf at the Site to preserve (in the form of originals or exact copies,
13 or in the alternative, microfiche of all originals) all records,
14 documents, and information of whatever kind, nature, or description
15 relating to the performance of the Work at the Site. Upon the completion
16 of the Work, Motorola will provide Arizona a description of documents
17 contained in the plant file. Arizona shall within thirty (30) days of
18 receipt of that list, request to be provided copies of any documents it
19 wishes to maintain in its project file.

20

21 14.0 CLAIMS AGAINST THE FUND

22

23 Motorola agrees not to make a claim against Arizona for reimbursement of
24 any funds expended by Motorola in complying with any of the requirements
25 of this Consent Order. Nothing herein is intended to release any claims,
26 causes of action, or demands in law or equity against any person, firm,
27 partnership, or corporation not a signatory to this Order for any

28

1 liability. it may have arising out of or relating in any way to the
2 generation, storage, treatment, handling, transportation, disposal, or
3 release of any pollutant, contaminant, or hazardous substance relating to
4 the Motorola 52nd Street facility.

5
6 15.0 RESPONSE AUTHORITY

7
8 15.1 Nothing in this Consent Order shall be deemed to limit the response
9 authority of Arizona or any other agency of the State of Arizona or
10 local governmental unit as authorized by law.

11
12 16.0 REIMBURSEMENT OF COSTS

13
14 16.1 Motorola agrees to pay the sum of five hundred thousand dollars
15 (\$500,000) to the Arizona Water Quality Assurance Revolving Fund
16 (WQARF) in full satisfaction for all past costs that have been
17 incurred by Arizona in connection with the investigation and
18 oversight of the past release of hazardous substances, pollutants,
19 or contaminants at the facility, as required under this Consent
20 Order. If Motorola pays the full amount within thirty (30) days of
21 entry of this Consent Order, no interest shall be owed. After
22 thirty (30) days, interest on the unpaid amount shall be payable
23 and shall accrue daily at prime interest rate.

24
25 16.2 Motorola shall be responsible for all oversight costs incurred by
26 Arizona pursuant to this Consent Order. Such costs shall include,
27 but not be limited to, personnel costs for activities connected
28

1 with the site, fringe benefits, and indirect costs as documented by
2 Arizona; travel; testing; contractor costs; interagency costs; and
3 such other costs as deemed necessary by Arizona. Arizona shall
4 submit a quarterly statement of costs to Motorola which is to be
5 paid within thirty (30) days of submittal. This payment will be
6 considered delinquent after forty-five (45) days and interest shall
7 be charged and accrue daily at prime interest rate. Oversight
8 costs are to be billed separately from any other costs that may be
9 charged to Motorola.

10
11 16.3 If Motorola makes the payment required by Subparagraph 16.1,
12 Arizona covenants not to bring any civil judicial or civil
13 administrative action to recover any response costs incurred by
14 Arizona in connection with the Motorola 52nd Street Facility prior
15 to execution of this Consent Order. Arizona reserves the right to
16 seek judicial or administrative relief for recovery of all future
17 response costs.

18
19 16.4 For payments required by this Order, Motorola shall deliver a check
20 payable to the Arizona Department of Environmental Quality in the
21 specified amount to the following address:

22
23 Mr. James W. Price, Fiscal Services Manager
24 Arizona Department of Environmental Quality
25 2005 North Central Avenue Suite 600B
26 Phoenix, Arizona 85004
27
28

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1 A copy of the check and letter enclosing the check shall be
2 submitted to Arizona's Project Coordinator in accordance with
3 Paragraph 20.0.

4
5 16.5 No payment by Motorola in accordance with this Paragraph is a
6 penalty, fine, or monetary sanction of any kind.

7
8 17.0 RESERVATION OF RIGHTS

9
10 17.1 Notwithstanding compliance with the terms of this Consent Order,
11 including the successful completion of the Work to Arizona's
12 satisfaction, Motorola is not released from liability, if any, for
13 any actions taken by Arizona respecting the Site other than as
14 provided in Paragraph 16.0.

15
16 17.2 Rights of Arizona

17
18 17.2.1 Except as provided in Paragraph 16.0, Arizona reserves the right to
19 take any action pursuant to WQARF and/or any other legal authority,
20 including the right to seek injunctive relief, monetary penalties,
21 and/or punitive damages for any prospective civil violations of law
22 and/or this Consent Order. This subparagraph does not imply nor
23 should it be construed either explicitly or implicitly to provide a
24 waiver by Arizona of any violations by Motorola of applicable
25 criminal statutes.

1 17.2.2 Arizona expressly reserves the right to initiate an action for
2 damage to the State's Natural Resources, pursuant to 42 USC 9602 et
3 seq., as amended.
4

5 17.2.3 Arizona expressly reserves all rights and defenses that it may
6 have, including its right to disapprove work performed by Motorola
7 and to seek to compel Motorola pursuant to A.R.S. § 49-287 and §
8 49-921-928 to perform tasks in addition to the Work as provided in
9 this Consent Order. Arizona reserves the right to undertake
10 removal actions and/or remedial actions at any time pursuant to
11 A.R.S § 49-287 and § 49-921-928. Arizona reserves the right to
12 seek reimbursement from Motorola for costs incurred by Arizona
13 pursuant to A.R.S. § 49-287 and any other applicable State and
14 Federal Statutes.
15

16 17.3 The parties recognize that Motorola is entering into this Consent
17 Order as a compromise of disputed claims and that Motorola does not
18 admit, accept, or intend to acknowledge total liability or fault
19 with respect to any matter arising out of or relating to the
20 Site. Motorola does not contest the entry of this Consent Order
21 and agrees to be bound by its terms.
22

23 17.4 Except as expressly provided in Paragraph 17.0 or elsewhere in this
24 Consent Order, Motorola expressly reserves all rights and defenses
25 that it may have, including the right to make a claim or
26 counterclaim against other responsible parties, alleging that
27 because of acts or omissions of other responsible parties, the
28

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1 other responsible parties should be liable to Motorola for
2 contribution for the costs of the Work incurred by Motorola at the
3 Motorola Project Site, unless a satisfactory settlement as to
4 allocation of financial responsibility is reached between Motorola
5 and other responsible parties.
6

7 18.0 DISPUTE RESOLUTION
8

9 18.1 If a dispute arises under this Consent Order, the procedures of
10 this Section shall apply. In addition, during the pendency of any
11 dispute, Motorola agrees that it shall continue to implement those
12 portions of this Consent Order which are not in dispute and which
13 Arizona and Motorola determine can be reasonably implemented
14 pending final resolution of the issue(s) in dispute. The parties
15 agree they shall make reasonable efforts to informally resolve all
16 disputes.
17

18 18.2 In the event that Motorola challenges an Arizona decision, dispute
19 resolution is initiated by Motorola delivering to Arizona, within
20 seven (7) days of receiving the decision a Notice of Activation of
21 Dispute Resolution.
22

23 18.3 The Notice of Activation shall include Motorola's written statement
24 of the decision that it is challenging, Motorola's written
25 statement of the challenge and the reason therefore, and the name
26 of the person who will act for Motorola during negotiations. The
27 Project Coordinator will act for Arizona unless a different person
28

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1 is designated within five (5) working days of receipt of the Notice
2 of Activation of Dispute Resolution.

3
4 18.4 Negotiations shall continue until an agreement is reached, but not
5 for more than fifteen (15) working days unless the negotiators
6 agree that there is a good faith anticipation that a decision can
7 be reached and a second fifteen day period be agreed upon in
8 writing.

9
10 18.5 At the termination of negotiations, if a decision has not been
11 reached, each negotiator shall make a written statement of the
12 position that each is taking. These reports along with the written
13 decision that has been disputed and the Notice of Activation of
14 Dispute Resolution shall constitute the record upon which the
15 Director shall make his decision. The decision of the Director is
16 final and shall be binding upon the parties.

17
18 18.6 Motorola may file an action in the Superior Court within thirty
19 days of the final decision by the Director. Such an action shall
20 be a de novo action and Motorola shall have the burden of proving
21 that the decision of Arizona is arbitrary and capricious or
22 otherwise not in accordance with law.

23
24 18.7 The pendency of any dispute under this Paragraph shall not affect
25 Motorola's responsibility for timely performance of the work
26 required by this Consent Order except that the time period for
27 completion of work affected by such dispute shall be extended for a
28

1 period of time not to exceed the actual time taken to resolve any
2 good faith dispute in accordance with the procedures specified
3 herein. All elements of the work required by this Consent Order
4 which are not affected by the dispute shall continue and be
5 completed in accordance with the work plan schedule. The
6 determination of elements of work, submittals, or actions affected
7 by the dispute shall be determined by Arizona and shall not be
8 subject to dispute.

9
10 19.0 FORCE MAJEURE

11
12 Motorola shall perform all the requirements of this Consent Order
13 according to the time limits set out in this Consent Order and referenced
14 supporting documents or any modification thereto unless its performance is
15 prevented or delayed by events which constitute a force majeure.

16
17 19.1 "Force Majeure" for purposes of this Consent Order is defined as
18 any event arising from causes beyond the control of Motorola which
19 delay or prevent the performance of any obligation under this
20 Consent Order. Force majeure shall not include:

- 21
22 1. increased costs or expenses; or
23
24 2. delays due to acts or omissions by Motorola or its contractors
25 while Motorola owns any property within or contiguous to the
26 Site.

1 19.2 Motorola reserves the right to demonstrate that under appropriate
2 circumstances, events beyond the control of Motorola include but
3 are not limited to: extraordinarily adverse weather conditions;
4 injunctions and other orders issued by courts or administrative
5 agencies other than for non-compliance with this Consent Order;
6 delay associated with achieving the requirements of Appendix C
7 other than delay by Motorola in applying for permits, because to do
8 so has become technically impracticable from an engineering
9 perspective or because it would result in greater risk to human
10 health and the environment than alternative options; unanticipated
11 breakage or accident to machinery, equipment, or lines of pipe
12 despite diligent maintenance; delay in obtaining permits or
13 approvals required for the Work; and selection by Arizona of a
14 response action inconsistent with the terms of this Consent
15 Order. Arizona reserves the right to contend that any of the above
16 circumstances do not constitute events beyond the control of
17 Motorola.

18
19 19.3 Motorola shall have the burden of proving by clear and convincing
20 evidence that any delay is or will be caused by events beyond its
21 control and that the duration of the delay requested is necessary.

22
23 19.4 In the event of a force majeure, the time for performance of the
24 activity delayed by the force majeure shall be extended for the
25 time necessary to allow completion of the delayed activity but in
26 no event for a period longer than the period of the delay
27 attributable to the force majeure. The time for performance of any
28

1 activity dependent on the delayed activity shall be similarly
2 extended. Arizona shall determine, based on information as
3 submitted by Motorola, whether and to what extent the time for
4 performance shall be extended. Motorola shall adopt all
5 practicable measures to avoid or minimize any delay caused by a
6 force majeure.

7
8 19.5 In the event Motorola discovers a force majeure, Motorola shall
9 orally notify Arizona's Project Coordinator no later than two (2)
10 days after Motorola becomes aware of the occurrence of the force
11 majeure and shall notify the Department in writing, no later than
12 seven (7) calendar days after discovery of the force majeure, of
13 the anticipated length and cause of the delay. If Arizona agrees
14 that a delay is or was attributable to the force majeure event,
15 Arizona and Motorola shall modify the requirements of the Work to
16 provide such additional time as may be necessary to allow the
17 completions of the specific phase of Work and/or any succeeding
18 phase of the Work affected by such delay, with such additional time
19 not to exceed the actual duration of the delay. In the event that
20 Arizona and Motorola cannot agree that any delay in the Work has
21 been or will be caused by circumstances beyond the control of
22 Motorola, or as to the appropriate length of the delay, the dispute
23 shall be resolved in accordance with Paragraph 18.0 (Dispute
24 Resolution).

20.0 FORM OF NOTICE

When notification to or communication with Arizona or Motorola is required by the terms of this Consent Order, it shall be in writing, postage prepaid, and sent by certified mail, return receipt requested and addressed as follows:

As to Arizona

Director

Arizona Department of Environmental Quality

2005 North Central Avenue Suite 700

Phoenix, Arizona 85004

As to Motorola

Manager, Environmental Affairs

Mail Drop E 112

5005 East McDowell Road

Phoenix, Arizona 85008

Any submission to Arizona for approval pursuant to this Consent Order shall be made to the address shown above and shall be made by overnight mail or some equivalent delivery service. Any change of address of either party shall be promptly reported.

A copy of all notifications, reports, plans, drawings, and other communications shall also be sent to the respective Project Coordinators at the following addresses.

1 As to Arizona

2
3 Project Coordinator
4 Arizona Department of Environmental Quality
5 2005 North Central Avenue, Suite 400
6 Phoenix, Arizona 85004

7
8 As to Motorola

9
10 Project Coordinator
11 Mail Drop E 112
12 5005 East McDowell Road
13 Phoenix, Arizona 85008

14
15
16 21.0 MODIFICATION

17
18 21.1 The parties recognize that information or data gathered during the
19 performance of the Work required by this Consent Order may indicate
20 that modifications to the Work are necessary to accomplish the
21 objectives of Paragraph 5.0 and/or 7.0 and Appendix C of this
22 Consent Order. Activities not directly related to the Operable
23 Unit, such as public construction, may make modifications to the
24 work necessary. In that event, Motorola may recommend in writing
25 modifications to the Work or the schedule for the Work's
26 performance. Such modifications shall not be made prior to their
27 written approval by Arizona. Arizona shall respond to any such

1 request for modification within thirty (30) days of its receipt.
2 In the event of a disagreement, Motorola may invoke the dispute
3 resolution process of paragraph 18.0.
4

5 21.2 Arizona shall, on the basis of the Annual Progress Report, review
6 and analyze the effectiveness of the Operable Unit. Upon
7 completion of any such review as called for in this paragraph and
8 if Arizona determines that the Operable Unit is not meeting the
9 objectives set forth in Paragraph 5.0 of this Consent Order, or
10 that the Operable Unit is not effectively reducing and/or
11 controlling, and/or containing the release of hazardous substances,
12 then Arizona may propose, in writing, changes in the nature and
13 scope of the Work to be performed by Motorola. Motorola shall
14 respond to any such proposal within thirty (30) days of its
15 receipt. In the event of a disagreement, Arizona may invoke the
16 dispute resolution process of Paragraph 18.0.
17

18 21.3 Any modifications mutually agreed upon shall be memorialized in
19 writing by Arizona, made available to Motorola, and constitute a
20 modification of the Work.
21

22 22.0 EFFECTIVE DATE
23

24 This Consent Order is effective upon the date of it being signed by both
25 parties and entered with the Court.
26
27
28

1 23.0 INDEMNIFICATION

2

3 Motorola shall indemnify Arizona and hold Arizona harmless from any claims
4 arising from any injuries or damages to persons or property resulting from
5 any acts or omissions which are negligent, gross negligent, or wanton and
6 willful which occurred on behalf of Motorola, its officers, employees,
7 agents, receivers, trustees, successors, assignees, contractors,
8 subcontractors, or any other person acting on its behalf in carrying out
9 this Consent Order.

10

11 24.0 OTHER CLAIMS

12

13 With respect to any person, firm, partnership, or corporation not a
14 signatory to this Consent Order, nothing in this Consent Order shall
15 constitute or be construed as a covenant not to sue by any signatory with
16 respect to, or as release from any claims, cause of action, or demand in
17 law or equity.

18

19 25.0 TERMINATION AND SATISFACTION

20

21 25.1 Arizona agrees that, when it selects the final remedy for the
22 Motorola Site, to the extent possible it shall recognize the
23 relevancy of the Work being performed. When the final remedy has
24 been decided the parties shall negotiate and enter into a new
25 consent order which shall contain a transition plan for shutting
26 down, continuing, or modifying the Work of the OU as the final
27 remedy dictates. This Consent Order shall remain in effect until
28

1 such time as the Consent Order detailing the final remedy is signed
2 by all parties and entered with the Court.

3
4 25.2 Motorola also may petition Arizona for relief from the remainder of
5 the Work and for termination of the requirements of this Consent
6 Order if Motorola has reason to believe that one of the following
7 conditions exist:

8
9 25.2.1 The remainder of the Work, including any modifications thereto
10 pursuant to Paragraph 21.0 and 25.0 of this Consent Order, are
11 inconsistent with the final remedy selected for the Site by Arizona
12

13 25.2.2 The Work as defined in Paragraph 5.0 and Appendix C of this Consent
14 Order is technically impracticable to achieve from an engineering
15 perspective.
16

17 25.2.3 The Work as defined in Paragraph 5.0 and Appendix C of the Consent
18 Order will result in greater risk to human health and the
19 environment than alternative options.
20

21 25.2.4 The objectives of the Work as set forth in Paragraph 5.0 of this
22 Consent Order have been achieved prior to the time established for
23 termination in Appendix C, and no further Work is required to
24 maintain achievement of those objectives. Arizona shall respond to
25 any petition from Motorola within thirty (30) days of its
26 receipt. In the event of a disagreement, the dispute resolution
27 process of Paragraph 18.0 shall apply.
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1 26.0 PARAGRAPH HEADINGS

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The paragraph headings set forth in this Consent Order and its Table of Contents are included for convenience of reference only and shall be disregarded in the construction and interpretation of any of the provisions of this Consent Order.

27.0 MISCELLANEOUS

Arizona and Motorola agree that for the purposes of this Consent Order, no clean-up level for the contaminated aquifer will be established. However, in operating the Operable Unit, Motorola shall comply with Arizona treatment standards for all contaminants attributable to the Motorola 52nd Street facility. Motorola shall use Best Available Technologies capable of treating volatile organic compounds (VOC's) to maximum contaminant levels (MCL's). With full knowledge of this fact Motorola agrees to continue work on the following tasks:

27.1 A revised remedial investigation/feasibility study (RI/FS) work plan which includes schedules of work components that lead to a final remedy that will take place parallel/concurrently with RAP activities.

27.2 Additional characterization and definition of the nature and extent of the contaminant migration.

1 27.3 Presentation of existing bedrock RI/FS information to include
2 lineament analysis, confirmation drilling, sampling and evaluation
3 of bedrock remedial actions to determine the need for additional
4 future work.

5
6 27.4 Continued monitoring of wells in the impacted areas that are being
7 used for irrigation or residential use or for tracking the movement
8 of the contaminant plume.

9
10 27.5 Continued investigation into effective remediation measures for
11 inorganics (i.e., arsenic, cadmium, lead, nitrate, sodium,
12 chloride, and sulfate).

13
14 27.6 Continued community relations efforts as outlined in the community
15 relations plan for Motorola 52nd Street and revisions to include
16 the remedial design and Operable Unit remedial action.

17
18 27.7 The final remedy will require completion of the Public Health
19 Assessment (PHA) as part of the Feasibility Study. The PHA must be
20 prepared in accordance with the Superfund Public Health
21 Evaluation. If Motorola decides not to do further work on the PHA,
22 it must send a letter requesting that Arizona or the EPA conduct
23 whatever additional work is necessary to make the PHA acceptable.
24 Motorola agrees to reimburse and not to contest reasonable and
25 necessary costs incurred by Arizona or EPA in completing the PHA.
26
27
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1 27.8 A continued investigation effort for applicability of new remedial
2 technologies (i.e., bioremediation).

3
4 27.9 Development of a plan to mitigate any impacts to users of wells
5 that may become unusable in the future because of migrating
6 contamination from the Motorola Site.

7
8 27.10 The disposal/recycling methods used for contaminants recovered by
9 free-phase pumping, GAC polishing, stripping tower off-gas
10 treatment, and soil-gas treatment must be specified during the
11 design and specification phase and will be conducted in accordance
12 with applicable State and Federal hazardous waste regulations.

13
14 27.11 All documents generated as a result of this work are subject to the
15 reporting requirements of this Consent Order.

16
17 27.12 This Consent Order and the terms and conditions hereof are binding
18 upon the parties only for the site described herein.

19
20 SIGNED AT PHOENIX, ARIZONA THIS 20th DAY OF June, 1989.

21 STATE OF ARIZONA

MOTOROLA, INC.

22
23 By: Randolph Wood

By: Gordon Chilton

24 Randolph Wood, Director

Gordon Chilton, Senior Vice-

25 Department of Environmental Quality

President and General Manager,

26 Discrete and Special

27 Technologies Group

28 Maricopa County Superior Court Civil Action No. _____

-46-
CV 89-16807

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APPENDIX A

LETTER OF DETERMINATION

for

MOTOROLA 52nd STREET FACILITY

Phoenix, Arizona

September 27, 1988



ARIZONA DEPARTMENT OF ENVIRONMENTAL QUALITY

Rose Mofford, Governor
Ronald L. Miller, Ph.D., Acting Director

Letter of Determination
for
Motorola 52nd Street Facility, Phoenix

September 27, 1988

CERTIFIED MAIL
Return Receipt Requested

Mr. Robert Lee, Manager
Environmental Affairs
Discrete and Special Technologies Group
5005 East McDowell Road
Phoenix, Arizona 85008

Dear Mr. Lee:

RE: Approval of Draft Remedial Action Plan (RAP)
for Motorola 52nd Street Facility (June 24, 1988).

The Draft Remedial Action Plan has been reviewed for conformance with the Arizona Administrative Code A.A.C. R18-7-108 (Remedial Action Plan), Arizona Revised Statute A.R.S. § 49-282 Water Quality Assurance Revolving Fund (WQARF), the Comprehensive Environmental Response, Compensation, and Liability Act of 1980 (CERCLA), the Superfund Amendments and Reauthorization Act of 1986 (SARA), and other pertinent state and federal requirements.

The draft Remedial Action Plan is approved. This decision took into consideration the comparison of Alternative C, (the approved alternative), with alternatives A and D and the no action alternative. Each alternative was evaluated using the same criteria. See exhibit A. In addition, the decision is consistent with recommendations made in the Health Assessment conducted by the Agency for Toxic Substances and Disease Registry (ATSDR), of the U.S. Public Health Service.

The following provides a brief historical summary of the contamination problem, including initial efforts to

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Mr. Robert Lee
September 27, 1988
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remediate, along with a discussion of the Alternative C and how this operable unit meets the evaluation criteria and provide a containment and treatment remedy that can be implemented on an accelerated schedule.

Location

The Motorola 52nd Street plant is located in the eastern part of the City of Phoenix (attachment 1). A legal description of the plant boundary is included in the RAP. Major geographic features are the Papago Buttes to the east of the plant, the Salt River flowing westerly about one mile to the south, the Old Crosscut Canal located along 46th Street, and the Grand Canal which flows northwesterly through the area west of 40th Street and Van Buren Street. Phoenix Sky Harbor Airport is located approximately 1 1/2 miles to the southwest. The Phoenix Military Reservation, a 3/4 square mile area used by the Arizona National Guard, is located northeast and east of the plant.

Reason for the Remedial Action Plan

In November 1982, Motorola discovered a discrepancy in the inventory records for 1,1,1-trichloroethane (TCA) at the 52nd Street plant. TCA, a solvent used in various manufacturing processes at the plant, was stored for use in a 5,000 gallon underground tank. In January 1983, the TCA tank and other underground tanks used for storing virgin solvents were tested. The results indicated that the TCA tank was leaking. Within a few days after testing, Motorola discontinued use of all the virgin solvent tanks and began purchasing solvents in 55 gallon drums.

When the results of the tank test showed TCA leakage, Motorola notified the Arizona Department of Health Services (ADHS) and initiated a Preliminary Investigation for soil and groundwater contamination. The report of the Preliminary Investigation, which was published on December 9, 1983, indicated soil and groundwater contamination on the plant site and groundwater contamination off-site to the west. As the result of these findings, Motorola entered into a verbal agreement with the USEPA, ADHS and ADWR to characterize the environment near the plant site, identify the nature and extent of contamination and recommend remedial actions. One of the terms of the agreement was that the work would be performed in accordance with requirements established by the Comprehensive Emergency Response, Compensation, and Liability Act of 1980 (CERCLA, or the Superfund Act), Public Law 96-510. During the course of the investigation, CERCLA was amended by the Superfund Amendments and Reauthorization Act of 1986 (SARA), Public Law 99-499.

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Draft Remedial Investigation and Feasibility Study reports of June 1987 were prepared in accordance with the requirements of CERCLA and SARA. These reference documents contain citations for the task specifications under which the work was performed, and list draft reports issued as part of these studies (see attached Index to Administrative Record). This Remedial Action Plan has been prepared to summarize the findings of these investigations.

Voluntary On-Site Treatment

Motorola Inc., as a responsible party has volunteered to conduct the RI/PS. The Company has initiated an on-site groundwater treatment program in 1986. This included treatability testing, plus design and installation of a Pilot Treatment Plant (PTP) in the Courtyard at the Motorola plant site. (See attachment 2) The PTP is still operational and treats groundwater supplied from two extraction wells which were installed in the Courtyard area. Contaminated groundwater is treated in the PTP, and the effluent is utilized in air fume scrubbers located at the plant site.

Motorola is currently (1988) expanding the PTP from a nominal capacity of 35 gpm to 60 gpm to treat contaminated ground water on site and use the water in manufacturing processes to replace potable water supplied to the plant from the City of Phoenix. Motorola intends to maintain operation of the PTP to continue cleanup of groundwater as part of ongoing remediations.

Community Relations

A public meeting was conducted on July 11, 1988, to receive public comment on the proposed partial remedy. Response to all comments received have been prepared and appear in the Responsiveness Summary (See attachment 3). The Responsiveness Summary also outlines other community relations efforts accomplished in past years.

Purpose of Remedial Action Plan

The purpose of the RAP is to describe the operable unit as a part of the final remediation of soil and groundwater contamination. An operable unit is a remedial action that is separated from the overall site cleanup actions when it can be done expeditiously, is cost effective, prevents contaminant migration, and is consistent with the final site remedy.

This RAP has been prepared to describe the interim cleanup of soil and groundwater contamination associated with historical disposal of waste solvents and other contaminants at the

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Motorola Inc. 52nd Street Facility in Phoenix, Arizona. (See attachment 4). The Arizona Department of Environmental Quality (ADEQ) on March 25, 1988, requested the preparation of the RAP. Several alternative plans are addressed in the RAP, each considered as a partial solution or operable unit for cleanup of contamination. A complete list of all alternatives considered can be found in the Remedial Investigation/Feasibility Study (RI/FS). The recommended alternative, or plan, will be an integral and basic element for a more comprehensive cleanup of soil and groundwater contamination.

Alternative Selected

The Remedial Action Plan serves to document the selection of Alternative C, as the operable unit for remediation of contamination. Alternative C was modified in the RAP to discourage discharge of extracted and treated groundwater in favor of beneficial use options. Alternative C consists of the following basic components:

- o Onsite extraction and treatment of groundwater from the courtyard and 50th Street area;
- o Onsite extraction and treatment of vapor phase organic contaminants from soils from the courtyard and 50th Street area, the acid treatment plant, and the southwest parking lot;
- o Offsite extraction of groundwater designed to contain contaminant migration (east of) at the Old Crosscut Canal;
- o Onsite treatment of groundwater extracted from offsite wells;
- o Use of all treated groundwater at the Motorola 52nd Street facility.

Total groundwater extraction and treatment under alternative C will equal to approximately 810 gpm. Treated effluent would be used at the Motorola plant to replace water currently purchased from the City of Phoenix. The only current uses of the groundwater are one private well for lawn irrigation and swimming pool filling, and a second well which is pumped by the Salt River Project to supplement irrigation water flow in the Grand Canal. There is no current use of the groundwater for drinking water purposes.

Evaluation Criteria

The Remedial Action Plan describes the selected alternative as alternative C. Alternative C is an operable unit designed to provide:

- o Overall protection of human health and the environment. It will contain migration of high concentrations of volatile organic compounds (VOC's), and treat the extracted groundwater to a level which will meet State/Federal standards for the specific uses of the water and water use restrictions.
- o Compliance with applicable or relevant and appropriate requirements (ARARs) and substantive requirements of permits, (i.e pre-treatment requirement for effluent discharge to Publicly owned treatment plant, two on-site Air Quality Permits, Construction Permits and Right of Way Acquisition.)
- o Long-term effectiveness and permanance. The interim remedy will maintain reliable protection of human health and the environment over time after cleanup levels have been met.
- o Reduction of toxicity, mobility, or volume by using groundwater extraction and air-stripping technology.
- o Short-term effectiveness. Alternative C will address the time period before Clean-up levels are achieved (construction/implementation).
- o Implementability. Alternative C is technically and administratively feasible.
- o Cost. The estimated capital cost is \$3.1 million, operation and maintenance is \$0.7 million annually, and net 20 years present worth cost is \$7.6 million.
- o Community acceptance. Review of public comments on the remedial Project Plan indicate the public generally accept Alternative C.

In Summary, Alternative C (the operable unit) is believed to provide the best partial remedy among the alternatives with respect to criteria used to evaluate remedies. Based on the information available at this time, therefore, the State of Arizona believes alternative C would be protective of human health and the environment, would meet applicable State and local regulations, and would be cost-effective. This partial remedy satisfies the preference for treatment that reduces

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Mr. Robert Lee
September 27, 1988
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toxicity, mobility, or volume as a principal element. All substantive permit requirements will be met during implementation of this remedial action. It is determined that the remedy for this operable unit uses permanent solutions and alternative treatment technologies to the maximum extent practicable.

Outstanding issues pertaining to this operable unit will be more clearly defined and addressed during the Consent Order negotiations. One item on the list of issues is recovery of costs. The State and EPA intend to seek recovery of past and future oversight costs.

Your cooperation and voluntary actions to date are reflective of a commitment to provide a permanent remedy in the near future. This operable unit is a step in the right direction. As explained earlier, the Consent Order will constitute an enforceable agreement and will provide the vehicle to implement and accomplish containment and partial remediation. Further efforts will be required for remediation of the aquifer. This will be addressed in the Consent Order and ongoing WQARF investigations.

Thank you for your cooperation. If you should have any questions regarding this decision letter, please contact Mr. Dan Marsin at (602) 256-2338.

Sincerely,



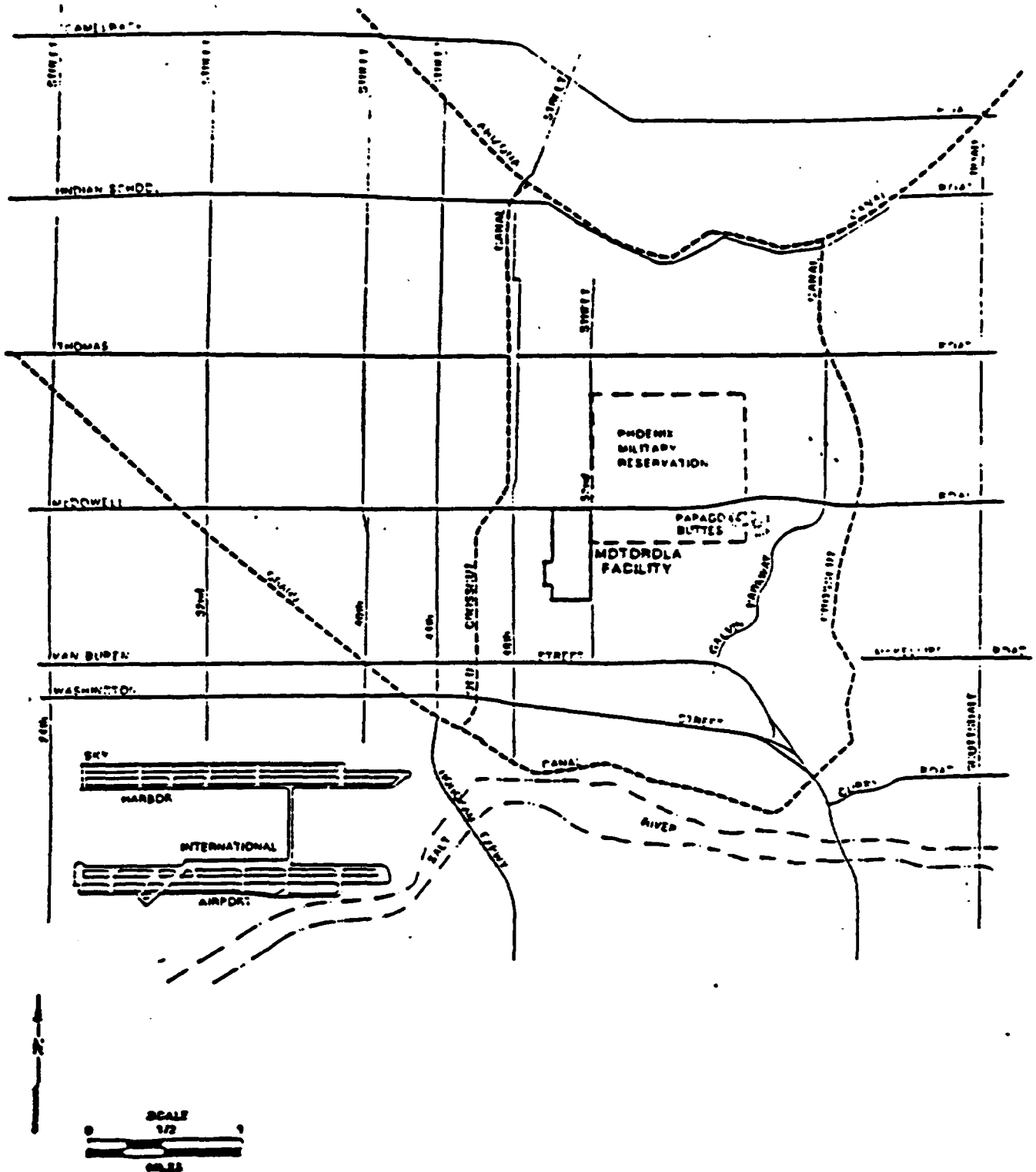
Norm Weiss
Assistant Director

NW/gls

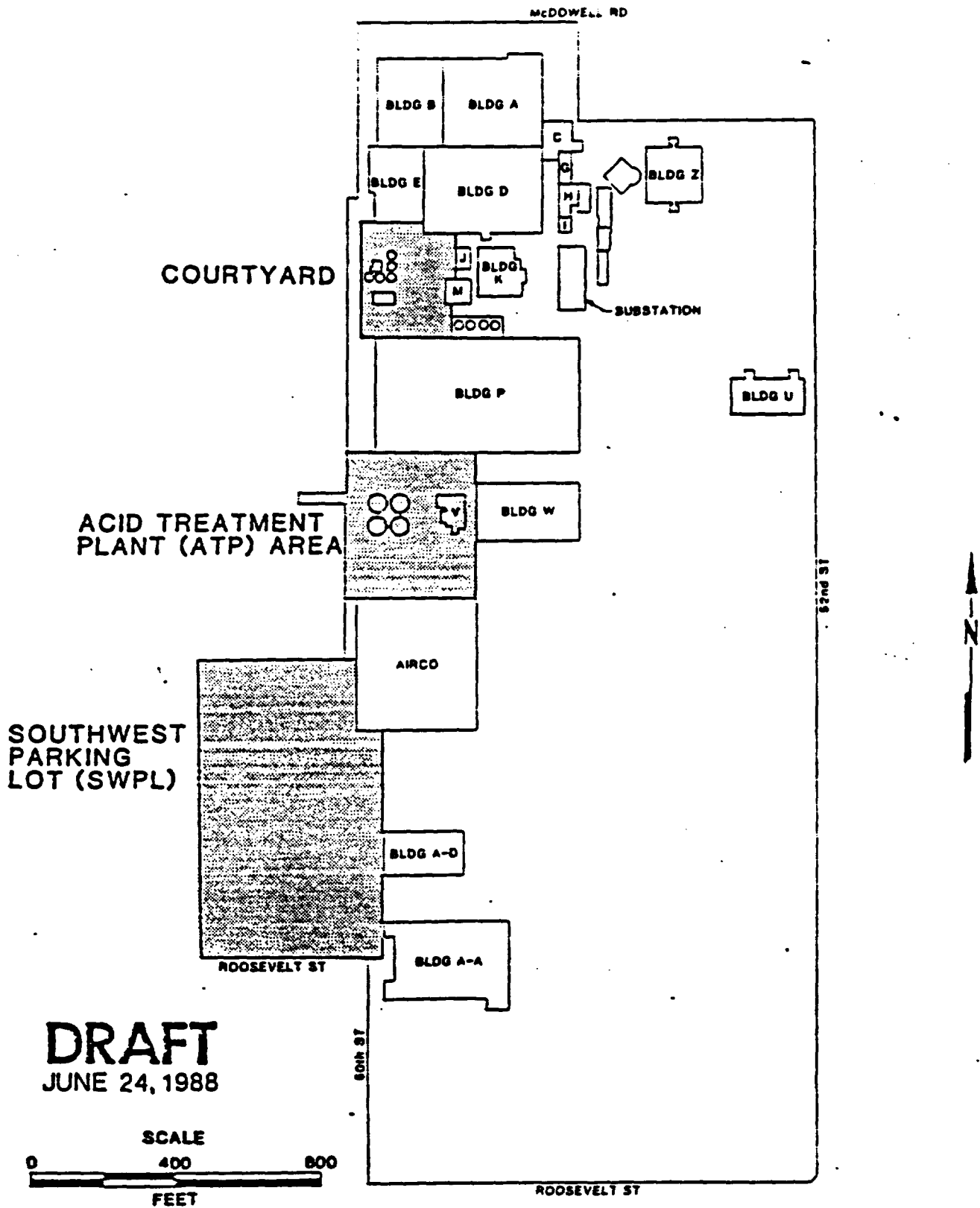
cc: Gerald Clifford, EPA
Doug Toy, ADWR

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VICINITY MAP
 Maricopa County Superior Court Civil Action No. _____



DRAFT
JUNE 24, 1988

SCALE
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FEET

SITE PLAN
Maricopa County Superior Court Civil Action No. _____
MOTOROLA 52ND STREET PLANT

CV 89-16807

ATTACHMENT 3

RESPONSIVENESS SUMMARY MOTOROLA 52ND STREET SITE

A. OVERVIEW

During the public comment period for the Motorola 52nd Street Operable Unit Remedial Action Plan (OU-RAP) from June 24 through July 25, 1988, the Arizona Department of Environmental Quality received comments and questions on the recommended partial remediation for the Motorola 52nd Street site.

Many of the comments and questions received concerned issues that are not pertinent to ADEQ's selection of a partial remedy at the site. However, all comments and questions received are addressed in this document. In some cases involving complex questions or those requiring an involved technical response, reference is made to sections of the draft Remedial Investigation (RI), the draft Feasibility Study (FS), or the draft RAP.

A number of comments and questions concerned risk and health assessments associated with the site and indicated a need to explain the various health related studies. A public health assessment is an evaluation of potential public health impacts at a site. A health risk assessment involves characterizing the risk to human health posed by chemical releases into the environment by combining exposures and known dose-responses. An epidemiologic survey is an evaluation of incidents of diseases in an area that can be attributed to a specific environmental factor. A Risk Assessment and Public Health Assessment are included as part of Motorola's draft Feasibility Study. The Agency for Toxic Substances Disease Registry (ATSDR) completed a Health Assessment for the Motorola 52nd Street Facility on May 8, 1988. The ATSDR report concluded that water from offsite wells at the currently detected concentrations of volatile organic compounds (VOCs) and inorganic contaminants pose no significant human health risks as it is now being used, and that no follow-up health study is indicated at this time. ADEQ however, has contracted with the Arizona Department of Health Services (ADHS) to perform a health risk assessment, and an epidemiologic survey of the area around the Motorola 52nd Street facility.

Final selection of a remedial action alternative and the design and operation of that alternative will consider issues brought up during the public comment period.

B. BACKGROUND ON COMMUNITY INVOLVEMENT

As soon as the initial 1,1,1 Trichloroethane (TCA) leak was confirmed in January 1983, Motorola conducted a number of

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activities to inform and update the general public and their employees at the 52nd Street facility. Most of these activities involved written correspondence, as summarized below:

Correspondence	Date					
	2/83	3/83	5/83	9/83	12/83	3/84
News releases to media	x	x				
Press conference					x	
Hand-delivered letters to residents near the facility	x		x	x		
Interoffice memo to 52nd Street employees	x	x	x	x		x
Summary of preliminary findings distributed the media, neighbors, employees					x	

The October 1984 factsheet and the January 1985 Update #1 newsletter were delivered to approximately 5,000 residents around the 52nd street facility. Residents were requested to return a self-addressed stamped business reply card if they wanted to be placed on the mailing list. One hundred sixty-five (165) cards were received, 3 percent of those contacted. Agency representatives, interest groups, and elected officials were added to the mailing list. In June 1988, the mailing list numbered 450.

The CRP has been followed since December 1984 and became an appendix to the RI/FS Work Plan. Specific community relations activities that were conducted from that time through the public comment period that ended in July 1988 are discussed in Section F.

C. SUMMARY OF PUBLIC COMMENTS AND AGENCY RESPONSES

LETTER FROM ROBERT C. ANDERSON, P.E.

Maricopa County Superior Court Civil Action No. _____

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1. Question/Comment: It (Newsletter #6) does not address: (1) the migration rate of the contaminants, (2) the location of other wells used for potable, irrigation, or swimming pool water (3) an estimate of when the contaminants will reach those wells (4) how the proposed remedial action plan pumping rate and duration of pumping is designed to keep the contaminants from reaching those wells (5) the effects on dillution of contaminants from migration and dillution from future ground water charging during the course of a R.A.P. that may last as long as 20 years (6) why the pumping rates are not required to be higher.

Response: Update 52nd Street RI/FS, Newsletter #6, is intended only to summarize the extent of the contamination, the cleanup alternatives described in the draft Remedial Action Plan (RAP), and the recommended alternative. It also identifies the involved agencies and tells where the public can find out more about the site and actually participate in the cleanup decision.

2. Question/Comment: Why would the Federal Government consider funding a clean-up effort such as this that is clearly attributable to a particular industry that could be held responsible?

Response: The Federal Government (or the State of Arizona) is not considering funding this cleanup action. Motorola, Inc. will bear the entire cost including appropriate costs incurred by the Federal Government and those of the State of Arizona as a result of oversight activities.

3. Question/Comment: The leaking underground storage tank referenced was a "virgin" solvent tank and had nothing to do with the "waste" solvent collection system that was installed. Both virgin and waste solvents contributed to the contamination problems over many years.

Response: Motorola has installed a new virgin solvent system as well as a new waste solvent collection system.

4.(a) Question/Comment: Why did it take from 1982 to 1986 for a pilot treatment program to be initiated?

Response: Immediate remedial actions were initiated during the first year of the study (1983). Please refer to the RAP for additional efforts undertaken before and after the implementation of the PTP.

4.(b) What is the schedule for construction and operation of the proposed R.A.P.?

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Response: The schedule for all activities to be performed in the implementation of the proposed RAP will be addressed in a Consent Order. The scheduled activities will begin only upon approval of the RAP and issuance of the Consent Order.

4.(c) How far have the contaminants traveled during the four years it took to initiate a pilot study?

Response: Contamination in groundwater is predicted to migrate at varying rates up to 300 feet/year, depending on the configuration of the contaminant plume. In 4 years, contamination could have migrated a distance of 1,200 feet or less.

4.(d) How far will they travel before the proposed R.A.P. is functional?

Response: Contamination migration rates are variable depending on many factors including local hydrogeologic conditions. Volatile organic compounds are predicted to migrate at rates approaching 300 feet per year. A primary objective of the recommended remedial action, Alternative C, is to contain further migration at the Old Crosscut Canal. As stated above, the implementation schedule for Alternative C will be established in the Consent Order.

5. Question/Comment: You list other contaminants found in the soil and groundwater sampling but you do not identify a R.A.P. except for volatile organic compounds. What are or were the sources of the other contaminants? Are the sources now under control? How are the sources monitored to prevent reoccurrence? When did the contamination occur? What are the measured levels of contamination? What levels of contamination are safe? Will the contaminants continue to leach out of the soil into the groundwater? Is the soil contaminated at the surface level where it could be potentially harmful by contact with the soil or storm water runoff over the soil? Are these other contaminants migrating like the V.O.C.'s? Were measurable quantities of nickel, cyanide, or other contaminants not listed in page 3 found?

Response: Volatile organic compounds make up the major part of environmental contamination at the Motorola 52nd Street site. Inorganics will also be extracted during treatment of groundwater. Twenty-five (25) potential sources of contamination have been identified at the Motorola 52nd Street plant (see Table 2.1 of the RAP). All sources were thoroughly investigated and efforts were made to prevent any further releases. A history of chemical releases as well as measured concentrations of contaminants is contained in the Remedial Investigation Report.

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All hazardous wastes are managed in compliance with the Resource Conservation and Recovery Act (RCRA) regulations to prevent unpermitted releases to the environment. The risk to public health of contamination is a function of exposure pathways as well as concentrations. A health Assessment report, dated May 2, 1988, was prepared for the project by the federal ATSDR. Also, a draft health risk assessment was prepared by Dames & Moore Chapter 7 of the draft FS reports.

Inorganic contaminants are identified in the draft RI report, and remediation of contamination is discussed in the draft Feasibility Study. The migration of inorganic contaminants is not the same as VOC contamination migration in groundwater. The inorganics bond to soil particles thus the difference in migration rate. As discussed in the draft RI, inorganic contaminants detected were found not to have migrated at the same rate as groundwater in the aquifer. Inorganic levels that were encountered in the source studies and in groundwater monitoring are reported in the draft RI report.

6. Question/Comment: How did the contaminants arrive at the Southwest parking lot area? Surface run-off? Groundwater migration? chemical spills? Leaks? In addition to Motorola property, isn't part of this general area both public and private property where natural storm water drainage flows from Northeast to Southwest washing across and under Motorola property and the public and private property? What effort is being made to prevent reoccurrence (sic) of the contamination? Will the proposed R.A.P. address this area and the area on West and Southwest of the parking lot? The Newsletter indicates the wells will only extend from McDowell 200 feet South along the canal which does not appear to address potential migration from the Southwest parking lot area.

Response: The proposed offsite groundwater extraction system at the Old Crosscut Canal (Alternative C) will actually extend 2,000 feet or more south of McDowell Road, not 200 feet. The figure 200 feet was a typographical error. Model predictions indicate that the zone of capture created by this recovery system will encompass contaminated groundwater emanating from the area of the Southwest Parking Lot. Information regarding the groundwater extraction system can be found in the draft RI/FS study.

7. Question/Comment: What is scope and time frame for a foreseeable "complete solution" vs. the partial cleanup or "operable unit" proposed? Why the Delay?

Response: The proposed operable unit is predicted to substantially reduce the groundwater contamination in the area of the plant site, and between the plant site and the Old Crosscut

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Canal. It will also contain the high levels of contamination found to exist within that area from migrating to the west of the canal. Monitoring of the performance of the operable unit remediation and/or further studies offsite will be needed before any further remedial actions can be approved by ADEQ. A risk assessment and health effects study will also be necessary before the complete remedy, or final solution, is agreed upon and implemented. The section pertaining to modeling in the RI provides timeframe for remediation.

8. Question/Comment: What is the planned pumping rate from the groundwater beneath Motorola property? You state 700 GP? will be pumped from off-site to the Motorola plant for treatment and use. What is the total G.P.M. that the water table will be reduced? 700 G.P.M. is approximately 1 million gallons per day x 7 days/week x 52 weeks/year x ? years plus the on-site pumping/

Where is the concern for Arizonas (sic) groundwater supply problems that are widely publicized and that the Rio Salado project was going to help resolve? As you state, Motorola currently gets their water from the city of Phoenix whose primary supply is surface water, not ground water.

I believe the Motorola plant uses between 3 and 4 million gallons per day for all purposes - product processing, sanitary, cooling, etc. The reclaimed water will have very little value to Motorola, particularly since the contaminants addressed in item 5 will ultimately be discharged into the city of Phoenix sewer system and then will be discharged in the effluent from the city treatment plants where they will again have the opportunity to contaminate soil and ground water or be removed in the sludge from the treatment plants which is placed in land fills which have a similar potential for contamination. Contaminants of this nature have been a long standing problem for city treatment systems.

Assuming a total pumping rate of 2 million gallon per day of contaminated water that can only be used in a special isolated system where it could not cross contaminate Motorolas (sic) potable or process water supplies, the use would be limited to scrubbers and cooling towers which are not likely to use that much water. The end result will likely be direct pumping of the excess to the city sewer system; which I believe is in violation of city codes, places an unnecessary load on city sewers and treatment plants, and depletes the groundwater supply.

Why doesn't the R.A.P. address proper cleaning of all contaminants and recharging back to the groundwater instead of proposing an apparently fragrant waste of one of Arizonas (sic) vital resources?

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Two million (sic) gallon/day would supply a population of between 13 and 20,000 people.

Response: Alternative A proposes 4 to 6 wells located in the Courtyard and the 50th Street area pumping a total of 60 GPM of groundwater from the alluvium. Each well would include a sump pump in the bedrock for removal of free phase organic liquid. Alternative C would place an additional 10 wells among the Old Crosscut Canal pumping 75 GPM each. The total pumping rate for the recommended remedial action is therefore 810 GPM (approximately 1.2 million GPD or 426 million gallons annually). The treated groundwater will be beneficially used by Motorola at the plant site. Treatment levels may vary depending on uses of the water. Prior to discharge to City of Phoenix (COP) sewer all effluent will meet state Permit requirements and COP discharge requirements. Recharge of treated groundwater is not judged to be a technically viable alternative because of the thin alluvium in the plant area. Use of the treated groundwater for industrial purposes reduces the demand on the City's potable water supply. Under the State Superfund rules beneficial use of groundwater includes industrial uses.

9. Question/Comment: How will monitoring be done and who will monitor the discharges of the removed V.O.C.'s into the atmosphere from the "cleaning" system? Carbon beds have a limited capacity and must be replaced or reactivated or atmospheric discharges will occur. What is the disposal means for the spent V.O.C. contaminated carbon?

Response: Maricopa County Pollution Control discharge standards will be met with the utilization of groundwater treatment system(s). Granulated activated carbon (GAC) systems will be used for treating soil gases and stripping tower off system gases, and final polishing of groundwater will vary. Current plans call for some solvent to be recovered (for recycling or incineration) by steam regeneration of the activated carbon system. Other alternatives are off site disposal as a hazardous waste or off site regeneration of activated carbon. ADEQ will be attentive to all monitoring conducted by Motorola and retain the authority to observe and/or actually conduct the monitoring to assure compliance with all applicable discharge requirements.

10. Question/Comment: How will monitoring be done and who will monitor the liquid effluent from the "treatment system" to assure it is operating effectively so the V.O.C.'s (sic) are not bypassed on the cooling tower where they will be discharged into the atmosphere?

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Response: Motorola Inc. will have monitoring responsibilities. However, ADEQ will closely supervise and insure the extraction/treatment systems are working efficiently and that this system protects public health and environment.

11. Question/Comment: You state T.C.A. replaced T.C.E. at Motorola in 1973. I believe you will find some T.C.E. was still being used at Motorola 52nd Street in the early 1980's.

Response: A small quantity of TCE has been used at the plant since 1980.

LETTER FROM ROBERT C. ANDERSON, P.E.

12. Question/Comment: What specific sources of contamination, both past and current, from V.O.C.'s as well as the various inorganics have been identified? What action has been taken to control the contamination sources and assure they do not reoccur in the future?

Response: Similar questions/comments were answered as part of ADEQ's response to number 5. ADEQ will closely supervise the selected alternative that when implemented will contain migration and provide treatment.

13. Question/Comment: It is stated the final RI/FS report was due 2/86. Newsletter No. 4 dated 6/86 indicates the feasibility study had just begun. Why the delay?

Response: The Newsletters are prepared to inform the public of the status of the investigation and/or remediation at the time the letters are issued. The schedule for ongoing and future activities will be stipulated in the Consent Order.

14. Question/Comment: It is stated that economic criteria is one of the factors used in determining the technology to be used for containment and treatment. I assume this means the cost of the remedial action. How is the cost evaluated in relation to the public benefit achieved? In relation to the degree of the cleanup required? In relation to the number of contaminants that must be cleaned up? In relation to the number of years it will take for cleanup? Who has input into the cost evaluation? Who makes the final decision? How much influence does Motorola have in this determination? How much influence does Motorolas Environmental Consultant (sic) have?

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Response: Cost effectiveness is only one of many criteria determining the selection of a remediation plan at the Motorola 52nd Street site. (See A.A.C. R18-F-109). Protection of public health and water quality are the primary concerns. The Motorola 52nd Street site is a State Lead site with ADEQ as the lead agency involved in the decision making process.

15. Question/Comment: It is stated that cleanup of inorganic contaminants was under consideration. Newsletter No. 6 does not indicate any cleanup effort except for volatile organic carbons (V.O.C.'s). Why?

Response: Inorganic remediation will be fully addressed as part of the complete remedy. The RI/FS provides data and information pertaining to inorganics.

16. Question/Comment: It is stated there are few precedents for solving groundwater contamination problems. The concepts of pumping for chemical and physical treatment have been practiced in various parts of the United States for more than 10 years. The technology is little different than that used for wastewater treatment, potable water treatment, and many industrial applications.

Response: We agree that in the State of Arizona there are only a few full scale operations addressing groundwater contamination. Also please refer to response number 5 for more detail.

17. Question/Comment: It is stated the V.O.C.'s are not considered a health hazard when irrigation water is used for edible crops but the affect of heavy metals and other inorganic contaminants is not addressed. Why? What is the potential health hazard?

Response: The Arizona Department of Health Services (ADHS) is currently conducting a risk assessment and epidemiological survey relative to the Motorola 52nd Street site. Inorganics will be addressed along with associated risks in the final RI/FS.

18. Question/Comment: The Newsletter avoids answering the question on health hazards from contact with contaminated irrigation water by simply referencing the physical dangers in canals and irrigation ditches. What are the potential hazards? Again, V.O.C.'s are addressed but not other contaminants. If I understand correctly, well water is used for irrigation when the canals are "dried up" for cleaning and maintenance.

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Response: Similar questions/comments were addressed as part of ADEQ's response to number 17.

19. Question/Comment: The Newsletter states the public hearing on the Remedial Action Plan (R.A.P.) was to be held in mid 1986. It is two years late. Why?

Response: Alternative C as presented in the current RAP is the first acceptable plan for extraction and treatment of contaminated groundwater. Limited remediation in the pilot treatment plant has been ongoing since 1986. Please also refer to the Community Relations section of this Responsiveness Summary.

20. Question/Comment: It is stated the Pilot Plant was designed to treat 35 G.P.M. According to Letter No. 6, 700 G.P.M. will be treated from off-site pumping and an unstated G.P.M. will be treated from on-site pumping. What is the total G.P.M. to be treated? What is the estimated cost of the treatment and pumping facility? What is the schedule for full capacity operation. What portion of the costs for the R.I./F.S. will Motorola pay? What portion of the costs for the Pilot Study and R.A.P. will Motorola pay? Who pays the remainder of each?

What is the G.P.M. demand for Motorolas (sic) process exhaust scrubbers and cooling water towers? What happens to the remaining G.P.M. of water pumped or will pumping be limited to the capacity needed for the scrubbers and cooling towers?

Response: See response to comment #8. It is estimated that Alternative C implementation (design and construction) and the first year of operation will cost about \$3 million to \$3.5 million. Motorola, Inc. will bear all costs. Thereafter, operation and maintenance will cost up to about \$1 million annually. The schedule for full capacity operation will be negotiated as part of the Consent Order. The demand for treated water for the process exhaust scrubbers is approximately 170 gpm, cooling towers will vary between 120-240 gpm, and the deionization plant will use the balance of the extracted and treated water.

21. Question/Comment: It is stated the Pilot Plant was to be designed for both organic and inorganic contaminant removal. Was it? Is inorganic removal part of the R.A.P.?

Response: Yes, the PTP was designed for treatment of organic and inorganic contaminants. Please refer to the RI/FS.

22. Question/Comment: The water table contour map on Page 4 shows

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ground water flow to be in a southwesterly direction, much the same as surface water flow. Letter No. 6 states interceptor wells are to be placed along the canal to approximately 200 ft. south of McDowell Road. The map on Page 5 shows a pocket of contaminants extending out to the McDowell Road/Canal area that the proposed wells would intercept. This pocket appears inconsistent with the indicated direction of ground water flow except for the stated differences in permeability. The city sewer flowing west along McDowell Road could have contributed to this pocket by leaking Motorola wastes. The McDowell sewer was the main Motorola discharge until about 1960 when a west bound sewer along Culver Street was installed. McDowell still received some Motorola discharge. The proposed interceptor wells along the canal will certainly not intercept the indicated main direction of sub-surface slope. This is supported by the statement at the bottom of Page 3 of Newsletter No. 4 which says that in the alluvium the plume appears to extend farther to the southwest but in the bedrock it is more westerly.

Response: See Figure 5.4, Predicted Zones of Influence Pumping at Old Crosscut Canal, in the Draft Remedial Action Plan. The predictions of groundwater movement and contaminant migration are presented in the draft RI and FS reports, and will be updated with data from continued groundwater monitoring. Please refer to ADEQ response to Question number 6 for additional information.

23. Question/Comment: Page 6 shows isolated contaminated pockets south of the plant. The 15" primary sewer line serving the plant (installed in the mid 1960's when the Culver Street sewer was abandoned) runs south along what was formerly 50th Street with some discharge to the city sewer on McDowell Road but the primary flow goes south. The 50th Street sewer is Motorola owned to Roosevelt Street where it enters the city system. the city sewer flows south to south of the high school and then goes west to 48th Street, and then again south to the Salt River interceptor. These contamination pockets are consistent with the direction of flow of Motorola chemical wastes. Again, leaks in the city sewer could account for this contamination.

It is stated the contaminants in these pockets "differ" from those found elsewhere. How are they different? Chemical constituents? Concentrations? What are the contaminants? Does Motorola use or have they ever used these chemicals? Who researched Motorolas past and present chemical use? Could the contaminants be a by-product of Motorolas chemical processes?

Improper treatment of waste discharges from the Motorola Facility (such as pH control) could have damaged the 50th Street and McDowell Road sewers causing leaks.

Response: This will be addressed in the final RI. See the draft RI. These potential sources were investigated with soil-gas

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monitoring and other techniques employed in the RI investigation. The results are reported in the draft RI report.

24. Question/Comment: It is stated that former and present plant employees were interviewed. Those most knowledgeable of the plants environmental history are: Leo Rogers, Former Environmentalist; Robert Hays, Former Environmentalist and Chemical Operations Manager; Harry Kattelman, Former Facilities Engineers & Operations Supervisor; Nicholas Hild, Former Environmental Manager; H. Theodore Werner, Former Environmental Legal counsel; Robert C. Anderson, P.E. I was not interviewed? Were any of the others? Which ones? Who did the interviewing? There are documented records and witnesses to the fact that spills and leaks from buried pipes and buried tanks contaminated the site. This included acid waste, heavy metals, etc. Dry wells were used routinely. In earlier years, wastes were dumped in a depression on site fondly known as "Lake Motorola".

The statements in this Newsletter indicate either the content is controlled by Motorola, and inadequate investigation was done, or the people interviewed were not knowledgeable.

Hopefully, the knowledge of current actual and potential contamination sources is more accurate.

There is no excuse to be apparently ignorant of actual facts four years into the investigation.

Response: Information was gathered from many sources as identified in Chapter 2 of the draft RI report. Please also see the Community Relations section of this Responsiveness Summary.

25. Question/Comment: Page 4 states surface water is checked for V.O.C.'s. Is it checked for inorganics? What are the results? The stormwater drainage channels along 50th Street and southwest through public and private property have a long history of chemical contamination from leaks, spills, and washdown operations.

Response: This has all been addressed in the draft Remedial Investigation report, Section 2, Source Characterization. The practices years ago are not the same as today. The current objective is cleanup to protect public health and the environment.

26. Question/Comment: Page 2 states the Pilot Plants (sic) success at removing V.O.C.'s but does not address the effectiveness of removing inorganics although it is stated that the Pilot Plant is designed for inorganic removal.

Response: See the draft FS. The newsletters are not intended to present every detail of the data collected or work performed.

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Inorganics removal will be part of the criteria for authorizing a remedial alternative. Please also refer to the draft RI for design details.

27. Question/Comment: Again, there is no indication of inorganic contaminant locations or concentrations. Why? What are they?

Response: See draft RI. See response to comment number 26.

28. Question/Comment: What are the "twenty" potential sources of organic and inorganic contamination? Are these current sources? Past sources? Both?

Response: Please refer to the section on Source Investigation of the RI.

FROM PAMELA E. SWIFT, TOXIC WASTE INVESTIGATIVE GROUP, INC.

29. Question/Comment: If there is anyone here from the public, I would like for them to tell me just how much of that number they just understood.____

Response: The information presented at the public meeting was to inform the public of the alternative remedial activities proposed by Motorola, Inc. The speakers attempted to present the information in non-technical language and answer any questions that were brought up. Alternative C as an operable unit has been recommended as the best plan to begin mitigation of the contamination problem at the Motorola 52nd Street site. Public response to the plan will be considered before a final decision is reached on how to proceed.

30. Question/Comment: (Norm Peterson) doesn't follow that up by telling the public there are not any health problems because we along with the EPA and along either the CDC, Center for Disease Control, are not looking for health problems.

Response: The ADHS is conducting studies to try and determine if there is a connection between TCE contamination and public health concerns. This work is being conducted under an agreement between ADEQ and ADHS. See Administrative Record Index for reference to Public Health Assessment studies.

31. Question/Comment: What they are not letting the public know
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is one, in often cases, who polluted their water, how long their water was polluted and with what. And the public is out there being damaged every day.

Response: The known contaminant and extent of contamination from the Motorola Plant was reported in Chapter 2 of the RI. The water in that area is not used for drinking purposes. A Health Assessment was completed May 2, 1988 by ATSDR. It can be reviewed at the Saguaro Branch of the Phoenix Public Library or at the ADEQ Library, 1st Floor, 2005 N. Central, Phoenix, AZ. An epidemiological survey, scheduled for completion by May 1, 1989, is being conducted by ADHS.

32. Question/Comment: DEQ says the workers are not their responsibility. Who is taking care of those workers?

Response: Motorola has a fully staffed safety department, including an industrial hygienist, who monitors plant operations for compliance with OSHA regulations. The State of Arizona is an authorized state for enforcement of OSHA programs, which meets federal standards. This is administered by the Arizona Industrial Commission. The Arizona OSHA can be called at the request of employees.

33. Question/Comment: This is supposed to be a public meeting. It's held in July. Did you really want to get the public here?

Response: An accelerated schedule was implemented in an effort to begin remediation as soon as feasible. July 11, 1988 was chosen as the date for a public meeting in an effort to fit the schedules of the active participants in the Motorola 52nd Street Project during the 30 day public comment period. The site of the meeting was picked for the convenience of area residents and proved to be quite comfortable.

Intent is to get interested public to the meeting. It was held in a location near the plant. The meeting was held in the evening to facilitate greater attendance. Preceding the meeting notice was published in local newspapers on July 7, July 8, and July 25, 1988. Update #6 also announced the public meeting. It was hand delivered to the 5,000 nearby residents, and mailed to 450 persons on the mailing list. The month the meeting was held is basically irrelevant.

34. Question/Comment: I want these in my comments, and by the way, I want the comments sent to me this time. I have heard that since '83 you were not really making transcripts to properly address my concerns.

Response: A written transcript of the entire public meeting was made and is available for review at ADEQ's office at 2005 North Central Avenue in Phoenix.

35. Question/Comment: I have some problems with Dames & Moore doing the studies and they also are on almost a full-time basis with the city of Phoenix.

Response: See ADEQ response to similar comment number 66.

36. Question/Comment: The great letters that were sent out by the EPA, or DEQ or both, the last count I had, those letters that you are mailing to the public, 15 people.(sic) Is that the count? That's the count I have on record. That's why I didn't get noticed.

Response: Ms. Swift and 450 other interested parties were notified of the public meeting by regular mail. Notices were delivered by hand to about 5000 residents throughout the area of the Motorola 52nd Street site.

37. Question/Comment: I doubt very seriously that Motorola has been out \$10 million.

Response: Motorola's latest figures indicate the company has spent approximately \$10.5 to \$10.6 million on this project. This total includes expenditures for source elimination. The preliminary investigation, the remedial investigation, the feasibility study and Remedial Action Plan. This figure has been verified by ADEQ. Please also see Mr. Steve Smith's response to a similar question in the Public Meeting record.

38. Question/Comment: I'm asking you to please send me a list of every dime the state has been out on this Motorola mess because I have been finding out through other investigations that the Department goes in and takes soil samples and puts monitoring wells down and does all sorts of things and never recovers the cost.

Response: ADEQ is currently compiling a list of all activities it has participated in and the costs incurred relating to the Motorola 52nd Street Project. The mechanism for cost recovery, namely the Consent Order, is currently being drafted. Some samples have undoubtedly be split and analyzed by the State Lab to verify results reported by Motorola. The State of Arizona has incurred none of the capital expenditures relating to the project. The state will also recover future oversight costs.

39. Question/Comment: These technical assistance grants that were mentioned to the public, I'm going to comment about that because we have jumped through that hoop.

Response: The Technical Assistance Grants (TAG) program is a federal program designed to financially assist qualifying public groups in hiring experts to represent their views and explain technical aspects of projects such as the Motorola 52nd Street Project. ADEQ will assist such groups in making applications under the TAG program.

40. Question/Comment: I would also like the physical address of all of the wells that were polluted.

Response: See Table 1.6 in the draft Feasibility Study (F/S).

FROM ROBERT C. ANDERSON, P.E.

41. Question/Comment: They are discharged to the sewer along McDowell Road both ways. There is a natural drainage ditch runs northeast to southwest to this site. Back in the early days that was an open ditch. Motorola dumped their chemicals in it.

Response: Please refer to the Source Investigation section of the RI and Table 2.1 of the RAP.

42. Question/Comment: That's cyanide waste treatment.

Response: Please see response to comment number 41.

43. Question/Comment: Heavy chemical use, discharges into the atmosphere, heavy discharges chemicals to sewer. (sic)

Response: Please see response to comment number 41.

44. Question/Comment: One time in the late '70s the drains in the floors had been eaten through to the extent that they brought in several Ready-Mix trucks, concrete Ready-Mix trucks, to fill the hole in the ground under that building.

Response: Please see response to comment number 41.

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45. Question/Comment: How about a leaking chrome tank in that area?

Response: Please see response to comment number 41.

46. Question/Comment: There was some question about where flourides came from. How about from the acid waste lines.

Response: Please see response to comment number 41.

47. Question/Comment: How about the heavy metals.

Response: Please see response to comment number 41.

48. Question/Comment: You talk about the plume from the plant. You are probably seeing the tail of what was left.

Response: Please see response to comment number 41.

49. Question/Comment: Spills, contamination, washdown, leaks, washed right through the plant into these people's property. The high school is down here. Kids played in that ditch. How did the contamination get in the south parking lot? that's one way right there.

Response: Please see response to comment number 41.

50. Question/Comment: They had a sewer that they tapped into going down Culver Street, surcharged to the point that it overflowed into the people's yards.

Response: Please see response to comment number 41.

51. Question/Comment: Later they put in a 15 inch sewer going south. That sewer is known to have leaks.

Response: Please see response to comment number 41.

52. Question/Comment: In the influent boxes to the acid waste treatment system, eaten through, has been leaking in the ground for years.

Response: Please see response to comment number 41.

LETTER FROM PAMELA E. SWIFT, TOXIC WASTE INVESTIGATIVE GROUP, INC.

53. Question/Comment: What is the groundwater migration and surface water run-off? A map of this should be included in the Draft Remedial Action Plan.

Response: These subjects are covered in the RI.

54. Question/Comment: Where will Motorola get their water from for this project? Since Motorola does not have any water rights and this project will require thousands and thousands of gallons of water it is important that Motorola state where this water will come from. The City of Phoenix, should not supply water to Motorola for this project as they have stated in the past that there is a great water shortage in the City. This fact has been driven home by the City of Phoenix's increased water rates to the public. What is the total amount of water used by Motorola?

Response: The beneficial use of treated groundwater will reduce Motorola's demand on City of Phoenix supplied water. Alternative C calls for the withdrawal of about 810 gpm of groundwater from onsite and offsite extraction wells. It is proposed that the water be withdrawn under a Poor Quality Groundwater Withdrawal Permit to be issued by the Arizona Department of Water Resources (ADWR), and monitored by ADWR, ADEQ, and Maricopa County.

55. Question/Comment: Who will monitor the discharges of contaminants into the atmosphere from the air stripping process? Air monitoring should not be done by Motorola as they cannot be trusted to turn in proper readings. This should be done by the department's air pollution department, (purchasing equipment for this project if you have to). Also, air monitoring should be taken of the entire plant before and after the air stripping project begins. I have long suspected that Motorola has extensive air pollution around thier (sic) plant and has not been truthful in the results of their air monitoring program. For this reason they should not be allowed to do their own monitoring.

Response: The Maricopa County Pollution Control has authority to monitor air emissions. See also response to comment number 9.

56. Question/Comment: What chemicals are being used at the Motorola plant at this time. This is a very important factor as I believe that Motorola is still using TCA amoung (sic) other chemicals that are hazardous to the public. Motorola is one of

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the states biggest polluters. They have little or no regard for the public health and well being. Chemicals are being used by Motorola that are harmful to the public. Motorola should be required to list all of the chemicals that they are using. The department should test for all the chemicals that Motorola has used in the past and that Motorola is using now. Water, soil, and air test should be taken at this site. While the department is looking at this one problem, I suspect that Motorola is creating several other chemical problems.

Response: Information on chemical use and discharge is to be made available to the public under the Emergency Planning and Community Right-to-Know Act program. Also, under the State's Hazardous Waste Management Act, hazardous materials are regulated as to storage, transfer, treatment and disposal.

57. Question/Comment: More thought needs to be given to the treatment system. This entire section is not complete. What assurance does the public have that Motorola will operate this system as they have stated? An outside firm should completely take over the treatment system and apply BADCAT (sic) to this project. Their (sic) are too many holes in the proposed treatment operation as it is now.

Response: Best Available Demonstrated Control Technology (BADCT) will be applied. Through the Poor Quality Ground water Withdrawal Permit process, administered by ADWR, and the Consent Order to be administered by ADEQ, a monitoring system will be established for the treatment process. Reports would be required on a regular basis and oversight would be as specified in the Consent Order.

58. Question/Comment: State and Federal money should not be used in this project at all. Motorola made the mess and should use their money to clean it up. So far the department has thousands (sic), if not millions, invested in this project and have not made an effort to recover public funds used to date. Since Motorola has poison poisoned (sic) the environment for miles around their plant and has no doubt caused endless damage to the public's health and well being, it is foolish to use the public's money to help Motorola clean up this mess. The department should send a bill to Motorola for the cost incurred to date. The Environmental Protection Agency should also send a bill for cost to Motorola.

Response: Please see response to comments number 2 and number 38.

59. Question/Comment: Why is Motorola allowed to store chemicals,
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Motorola, Inc. through its contractor, Dames & Moore, has demonstrated the qualifications necessary to conduct the RI/FS and implement remedial actions at the Motorola 52nd Street facility. All activities by Motorola and its contractor(s) in conducting the RI/FS and any remedial actions are subject to the oversight of ADEQ and will in no way be subjected to a lesser standard of performance or liability than if ADEQ was conducting the RI/FS and remedial action.

64. Question/Comment: Contaminated wells in the property should be closed down and Motorola should pay the cost of supplying water to the property owners.

Response: Had a threat to public health existed this program would have been implemented. No private wells have been identified which are in use for drinking water purposes. Furthermore, the ambient quality of the groundwater affected by VOC contamination is too high in total dissolved solids (TDS) to be utilized economically as a source of potable water. Therefore, groundwater in the area is not used for potable purposes at this time. Potable water is supplied to the area by the City of Phoenix via surface water sources.

LETTER FROM MATTHEW R. BERENS, ESO., HERON, BUCHETTE, RUCKERT, & ROTHWELL, FOR THE PHOENIX UNION HIGH SCHOOL DISTRICT #210

65. Question/Comment: Groundwater is currently contaminated beneath the East High School property. The extent of contamination beneath the East High School is unknown.

Response: This is generally correct. Model predictions are based on a source of contamination (TCE) existing in the subsurface in the area of the Courtyard. Predictions cannot represent all observations accurately. In addition, other potential sources such as in the Southwest Parking Lot could be contributing to the observed contaminant levels in the area of East High School property. Please also refer to figure 4.3 in FS.

66. Question/Comment: The ground water will be contaminated for a long time in the future.

Response: Please see the response to comment #68. Also, Alternative C consists of plans to reduce VOC contamination directly upgradient of the abandoned school property by extracting and treating soil-gases from the unsaturated zone at the Southwest Parking Lot. This remediation is expected to also

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reduce VOC contaminant levels in ground water downgradient of the Southwest Parking Lot. Please refer to figure 4.3 in FS for additional information.

67. Question/Comment: Motorola's proposed remedial program does not address present contamination beneath the East High Property. There is currently no plan to remediate the present ground-water contamination beneath the East High property.

Response: Alternative C, consisting of 10 wells along the Old Crosscut Canal pumping 75 gallons per minute each, does address present contamination beneath the East High Property. The northern half of the East High property is within the predicted zone of influence of the proposed line of wells along the Old Crosscut Canal. At the same time onsite remediation (Alternative A) will reduce contaminate concentrations upgradient of the East High property. In addition, see responses to comment number 70.

68. Question/Comment: Volatile organics in the gas phase (soil gas) have been detected beneath the East High property.

Response: Soil boring results show soil gas contamination. Remediation in the Southwest Parking Lot will result in reduction of soil-gas concentration (see comment number 70). It should be noted that the observed concentrations of VOCs in the area of the East High School property are approximately the same order of magnitude as that detected in ambient air.

69. Question/Comment: The use of water beneath the property is limited.

Response: For several reasons, no beneficial use of groundwater is effected at the present time. The alluvium is thin; bedrock is shallow. Water is supplied economically by the City, and inorganic background water quality would probably require treatment before use in any case.

D. ATTACHMENT LISTING COMMUNITY RELATIONS ACTIVITIES CONDUCTED AT THE SITE PRIOR TO AND DURING THE PUBLIC COMMENT PERIOD.

Mailing List

The mailing list was continually reviewed and updated throughout the RI/FS. At three different times, newsletters were
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hand delivered to approximately 5,000 residents asking them to return a self-addressed stamped reply card if they wanted to be added to the mailing list. At the time of the July 11, 1988 public hearing, the mailing list numbered 450.

Central Information Source

Three contact persons were designated to respond to inquiries from the public. Their names, addresses, and telephone numbers were identified in press releases, newsletters, and local information repositories. These individuals were the community relations specialists from EPA, ADEQ, and Mr. Ken Phillips of Motorola.

Local Information Repositories

Two information repositories were established: the Saguaro Branch of the Phoenix Public Library and the ADEQ Library. During 1985, the Balsz School was the repository until the branch library opened. Technical reports, fact sheets, newsletters, articles, and other written materials were placed in these repositories throughout the RI/FS. The locations and hours were advertised in the newsletter. The Administrative Record also contains a complete index of project data and documents.

Task Force and Technical Subcommittee

A Task Force, comprised of representatives from federal, state, and local agencies, was established to provide technical oversight to Motorola, Inc. in performing RI/FS activities. A Technical Subcommittee, chaired by ADWR, was formed to facilitate review and approval of the technical aspects of the RI/FS.

The status of community relations was a regular agenda item at the Technical Subcommittee meetings. Committee members were kept informed of community relations activities, and helped to identify public concerns and additional public information needs. They were better able to understand the impact of committee decisions or relationships with the community.

Factsheets and Newsletter

One factsheet and six newsletters, known as "Updates," were prepared and distributed between October 1984 and June 1988.

Factsheet

October 1984

Summary of site history, activities to date

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and RI/FS Work Plan.

Update #1
January 1985

Specific RI/FS tasks; answers to citizens questions.

Update #2
May 1985

Results of resident interviews; announcement completion of Phase I; status of Phase II studies; glossary.

Update #3
October 1985

Plans for pilot treatment plant; overview of geology of area; summary of soil gas results; glossary.

Update #4
June 1986

Status report on sources verification, pumping tests, groundwater model, water quality tests; announcement of start of feasibility studies; glossary.

Update #5
December 1986

Description of pilot treatment plant operation; status of feasibility studies; glossary.

Update #6
June 1988

Summary of draft Remedial Action Plan (RAP) focusing on remedial alternatives; glossary; announcement of public comment period and public meeting.

Drilling notices

During the RI, when wells were being drilled, notices were delivered to nearby residents. These notices informed them of the drilling schedule, how the site would be secured, what the noise level might be, how the drillers would be dressed, and any other inconveniences they might encounter. They were given names and telephone numbers to call if they had questions. All drilling has been done in accordance with state regulations under ADWR's authority.

Public Comment Period

A 30-day public comment period on the draft RAP extended from June 24 to July 25, 1988. Notice of the comment period and the upcoming public meeting was published in local newspapers on July 7, July 8, and July 12, 1988. Update #6 also announced the Maricopa County Superior Court Civil Action No. _____

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comment period, the availability of the draft RAP, and the public meeting. This was hand delivered to the 5,000 nearby residents, and sent to those on the mailing list on June 24, 1988. The draft RAP was placed in the information repositories.

Soil-Gas 1985

	On-Site	Depth	Off-Site	Depth
1,1,1 Trichloroethane	10000 ppb	3.2 Feet	7000 ppb	1.7 Feet
Trichloroethylene	5000 ppb	3.2 Feet	100 ppb	1.7 Feet
Tetrachloroethylene	4000 ppb	3.2 Feet	8000 ppb	1.7 Feet
Trichlorotrifluoroethane	40000 ppb	3.2 Feet	2000 ppb	1.7 Feet

ppm-parts per million.
ppb-parts per billion

Maximum Off-Site values were found immediately adjacent to the on-site sampling point where maximum on-site contaminant levels were found.

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Exhibit A

COMPARISON OF REMEDIAL ACTION ALTERNATIVES

<u>Issue</u>	<u>No Action</u>	<u>Plan A</u>	<u>Plan C</u>	<u>Plan D</u>
1. Postulated reduction of threat to public health	No	Yes	Substantial	Substantial
2. Amount of ground water pumping for treatment	0	60 gpm	810 gpm	3500 gpm
3. Effective containment of off-site contaminant migration	No	No	Yes	Yes
4. Need for off-site treatment/disposal	No	No	No	Yes
5. Total costs (Capital + First Year O&M) and Cost Per Gallon TCE Removed	N/A	\$1.7 M	\$3.8 M	\$8.5 M
6. Institutional Requirements	N/A	Minimal	PQGWWP, Air Emissions	Plan C + Aquifer Protection Permit and Water Rights
7. Beneficial Use	None	100% in plant	100% in plant	Off-site disposal; exceeds on-site capacity

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ADMINISTRATIVE RECORD INDEX
MOTOROLA 52ND STREET FACILITY

<u>Document No.</u>	<u>Date</u>	
1	07/06/83	Map: Irrigation System, Chlorinated Hydrocarbon Analyses (Hubbard)
2	08/19/83	Chemical Leak Briefing (ADHS, ADWR)
3	10/04/83	GC/MS Volatile Organics Analysis
4	11/23/83	Samp./Analysis Data (B. Wiley)
5	12/09/83	Rpt: Preliminary Report Chemical Leak Project (Motorola, Inc.)
6	12/15/83	Report: Evaluation of Analysis Data (G. Muth)
7	01/04/84	Comments on Chemical Leak Report of December 9, 1983 (N. Ferrari)
8	01/09/84	Comments on Preliminary Report, Chemical Leak Project (H. Seraydarian)
9	01/13/84	Cover Ltr. for Preliminary Report and Chemical Data/Chemical Data as Requested for Submittal to State (P. McClellan, P.E.)
10	01/20/84	Preliminary Assessment Region IX with Related Memos Attached (J. Shepherdson)
11	01/24/84	Transmittal: Request for Phase II Investigation Proposal and Review Comments) (C. Anders)
12	01/24/84	Memorandum re: Consolidated ADHS Review Comments, Motorola 12/09/83 Presentation (W. Wiley)
13	02/17/84	Comments on Site Materials Submitted (Superfund Implem. Gp.)
14	02/17/84	EPA Comments on Section 7.2 of Preliminary Report w/Copy (H. Seraydarian)
15	02/21/84	Sampling Plan, Motorola, Inc. (J. Rubin)
16	02/21/84	Review Comments on Dr. Teitelbaum's Toxicology Report on the Groundwater Contamination (E. Theriault, M.D.)

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<u>Document No.</u>	<u>Date</u>	
36	05/22/84	Summary of Working Group Meeting of 5/17/84 (B. Wiley)
37	05/29/84	Analytical Results of Water Samples for EPA Method 502.1 & 503.1 (Analytical Techn.)
38	06/06/84	ADHS, EPA, and ADWR Review Comments on 5/17 Workplan Submittals (C. Anders)
39	06/15/84	Monthly Progress Report, May 1984 (R. Lee)
40	07/02/84	Memo: RI/FS Workplan Comments
41	07/09/84	?? (R. Lee)
42	07/17/84	Ltrs: Comments on Phase I and II Workplan Draft (C. Anders)
43	07/18/84	RI/FS Workplan Summary of Responses to Comments
44	07/18/84	Memo: Comments on Draft Phase III Workplan (File)
45	07/24/84	Ltr: Transmittal of Chemical Quality/Water Level Data Points (M. Hay)
46	08/03/84	Ltr: Summary of 18 July 1984 technical Committee Meeting (B. Wiley)
47	08/07/84	Activities Report, July 1984 (R. Lee)
48	09/05/84	Summary of Technical Committee Meeting, 8/24/84 (B. Wiley)
49	09/13/84	Chemical Quality/Water Level Elevation Data Plots (Gutierrez-Palmenberg)
50	09/14/84	Comments on Draft RI/FS Workplan and Quality Assurance Project Plan (H. Seraydarian)
51	09/25/84	Summary of Technical Committee Meeting, 9/19/84 (B. Wiley)
52	09/27/84	ADHS Comments on Draft RI/FS Work Plan (C. Anders)
53	10/01/84	Sample Documentation Report, Motorola, Inc. (R. Goloubow, J. Rubin, J. Surfus)
54	10/17/84	Review Comments on Quality Assurance Program Plan (T. Turner)

Maricopa County Superior Court Civil Action No. 3

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<u>Document No.</u>	<u>Date</u>	
55	10/22/84	Summary of 10/10/84 technical Committee Meeting (B. Wiley)
56	11/14/84	Monthly Progress Report, Oct. 1984 (R. Lee)
57	11/27/84	Summary of Items Discussed at Technical Committee meeting of 11/14/84
58	11/30/84	Task Specifications - Stratigraphic Boring/Well - RI/FS Motorola (Dames & Moore)
59	12/07/84	Task Specification - Soil - Gas - Sampling RI/FS - Motorola, Inc. (Dames & Moore)
60	12/11/84	?? (M. Rozelle)
61	??	Memo: Discussion w/Robert Lee on 12/18/84 and 12/19/84 re: CRP
62	01/01/85	Newsletter #1 "Update - 52nd St. RI/FS" (Motorola, Inc.)
63	01/17/85	Groundwater Treatment Plant Bid Package (Attached to 1/17/85 Cover Letter) (P. Casey, G. Lamb)
64	01/22/85	Monthly Progress Report, Nov. 1984 (R. Lee)
65	01/23/85	Monthly Progress Report, Dec. 1984 (R. Lee)
66	01/23/85	Draft Data Management Task Specification
67	01/23/85	?? (Dames & Moore)
68	(none)	Addendum No. 1 to Specification for Fabrication of Pilot Treatment System for Contaminated Groundwater (P. Casey, L. Foster)
69	02/11/85	Proposed Soil - Gas Sampling Locations (R. Lee)
70	02/18/85	Draft Sampling and Analysis Task Specification (R. Lee)
71	02/27/85	Comments on Draft Specifications for Pilot Treatment Plant (W. Wiley)
72	02/27/85	Work Plan Amendments (L. Foster)
73	02/27/85	Monthly Report, Jan. 1985 (R. Lee)
74	03/11/85	Summary of 2/27/85 Technical Committee Meeting (B. Wiley)

75	03/12/85	EPA Comments on Draft Task Specification for Sampling & Analysis (A. Strauss)
76	03/13/85	Comments on Draft Sampling and Analysis Task Specifications (B. Hammett)
77	03/19/85	Comments on Draft Task Specifications for Water Sampling and Analysis (B. Wiley)
78	03/21/85	Summary of 3/18/85 Meeting (B. Wiley)
79	03/25/85	2 Final Phase I Reports - RI/FS Study - Motorola Inc. (Gutierrez-Palmenberg)
80	04/03/85	February Activity Reports of Progress (R. Lee)
81	04/03/85	Draft Responses GW/SW Sampling and Analysis TS
82	04/03/85	Responses - Bench Scale Treatability Study
83	04/03/85	Responses - Pilot Plant Specifications
84	04/25/85	Task Specification for Modeling of Groundwater Contamination RI/FS Motorola Inc. (Dames & Moore)
85	05/03/85	Summary of 4/3/85 Technical Subcommittee Meeting (B. Hammett)
86	05/13/85	April Activity Reports of Progress (G. Gutierrez)
87	05/24/85	Final Groundwater Level Monitoring Task Specification (R. Lee)
88	06/10/85	Transmittal of Volatile Priority Pollutant Analysis (B. Wiley)
89	06/21/85	Agenda: 6/26/85 Technical Subcommittee Mtg. and Summary 5/13/85 Technical Subcommittee Mtg. (B. Hammett)
90	06/26/85	May Activity Reports of Progress
91	07/24/85	Draft Report Stratigraphic Borings/Monitoring Wells - RI/FS Motorola 52 Discrete Semiconductor Facility (Dames & Moore)
92	08/08/85	Draft Report (revision) Soil-Gas Investigation - RI/FS Motorola Inc. (Dames & Moore)
93	08/28/85	Memo: technical Subcommittee Meeting Notes (B. Hammett)

<u>Document No.</u>	<u>Date</u>	
94	09/04/85	Ltr: Activity Reports, June & July (R. Lee)
95	09/16/85	Ltr: Responses to Comments on Draft Source Verification Task Specification Report (R. Lee)
96	09/16/85	Responses to Source Verification Task Specification Comments (8/12/85 - EPA & 8/23/85 - ADHS; & Fnal. Source Verification Task Specification (R. Lee)
97	09/20/85	Ltr: Westbay Sampling Results, April/May 1985 (J. Hussey, E. Ricci)
98	09/23/85	Ltr: Pilot Treatment Plant and Well Installation (J. Hussey)
99	09/26/85	CSHS Waste Oil Storage Tank Monitoring Well (T. Gaikowski)
100	09/28/85	Memo: Technical Subcommittee Meeting Sept. 1985 RI/FS Progress Reports Aug. 1985 Attached (A. Hammett)
101	10/17/85	Memo: Technical Committee Meeting Advisory (B. Hammett)
102	10/18/85	Ltr: Comments on Draft Soil Gas Investigation and Stratigraphic Borings/Monitoring Wells Reports (A. Strauss)
103	10/21/85	Minutes of Meeting/TSC Source Verification Planning
104	10/21/85	Memo: Technical Sub-Committee Meeting Advisory (B. Hammett)
105	10/22/85	Fact Sheet on Water Analysis (Dames & Moore)
106	10/22/85	Ltr: RI/FS Progress Report, October 1985 (R. Lee)
107	11/06/85	Draft Well Evaluation Report - RI/FS Motorola 52 (Dames & Moore)
108	11/26/85	Results of Private Well Sampling (J. Hussey, E. Ricci)
109	11/27/85	Draft Aquifer Testing: A Preliminary Report - Motorola 52 (Dames & Moore)
110	12/18/85	Memo: Technical & Modeling Sub-Committee Meeting Notes (J. Rampe)

<u>Document No.</u>	<u>Date</u>	
111	12/21/85	Community Relations Plan-Final FI/FS, Motorola Site (R. Lee)
112	01/20/86	Revised Phase I Report RI/FS - Motorola 52 (Gutierrez-Palmenberg)
113	01/21/86	Ltr: Activity Reports of Progress for Nov/Dec with Reports Attached (2 Copies) (R. Lee)
114	01/22/86	Bench-Scale Groundwater Treatability Study (Dames & Moore)
115	03/28/86	Cover Ltr with "TS for Additional Borings and Wells: Second Phase" (J. Hussey, S. Smith)
116	03/31/86	Memo: Highlights of March 21, 1986 Mtg. (J. Rampe)
117	04/01/86	Ground-Water Modeling Study for Motorola 52: Summary of Stage I (Preliminary) Model Investigations (Dames & Moore)
118	04/03/86	Subsurface Remedial Investigation Plan No. 38-26-0928-86, AIG, Papago Military Reservation, Phoenix, Arizona, March 3, April 3, 1986 (U.S. Army EHS)
119	04/09/86	Cover Ltr. with TS for County and Wells and Borings (J. Hussey)
120	05/28/86	Draft Aquifer Testing: Second Report RI/FS - Motorola 52 (Dames & Moore)
121	06/02/86	Cover Ltr. with TS for Additional Wells: Third Phase
122	06/18/86	Cover Ltr. with PTP Design and Schedule Drawings (J. Hussey)
123	06/24/86	Interim Summary Report (Draft) RI/FS Motorola 52 (Dames & Moore)
124	06/27/86	Cover Ltr: with June Activity Reports (R. Lee)
125	07/16/86	Ltr. Revisions to Figures 6.5, 6.6, & 6.16, "Interim Summary Report (Draft)" RI/FS 52nd St. Facility for Motorola, Inc. w/Copy
126	07/21/86	Memo: Highlights of 6/27/86 Meeting (R. Henckel)
127	07/23/86	Ltr: Interim Summary Report Comments (A. Strauss)

<u>Document No.</u>	<u>Date</u>	
128	07/25/86	Ltr. with Responses to ADWR 6/20/86 Comments on Stage 1 (Preliminary) Model Investigations Rpt. (J. Hussey)
129	07/28/86	L. Review Comments on Draft Interim Summary Report of 6/24/86 (R. Henckel)
130	07/30/86	Ltr: Proposed Revising, 1986 Ground Water Sampling Plan, New and Existing Wells (J. Hussey), E. Ricci)
131	07/31/86	Ltr: Review Comments on Interim Summary Report and TS for Additional Wells: Third Phase (S. Navarro)
132	07/31/86	Ltr: June Activity Reports of Progress (R. Lee)
133	08/01/86	2 Copies Draft Screening Report - Feasibility Study - Motorola 52 RI/FS (Dames & Moore)
134	08/13/86	2 Copies Draft Source Verification Report - RI/FS Motorola 52 (Dames & Moore)
135	08/19/86	Ltr: Results of Second Quarter Off-Site Sampling with VOA Analyses of Water Samples Attached (T. Potucek)
136	08/22/86	Ltr: Review Comments on Interim Summary Report of 6/17/86 (T. Potucek)
137	09/04/86	Ltr: Review Comments Draft Source Verification Report RI/FS (T. Potucek)
138	09/08/86	Memo: Highlights of 8/1/86 Mtg. List of Attendees and Proposed Agenda (R. Henckel)
139	09/10/86	Response to Comments Interim Summary Rpt. RI/FS (J. Hussey)
140	09/10/86	Submittal of Chapter 4 Interim Summary Rpt. (Draft) RI/FS (J. Hussey)
141	09/11/86	Ltr. re: Leaking Underground Storage Tank Investigation at Papago Military Reservation (T. Potucek)
142	09/16/86	Ltr: Addendum to: TS for Additional Wells: Third Phase (J. Hussey)
143	09/17/86	Ltr: FS Screening Report Comments (A. Strauss)
144	09/22/86	Ltr: Review Comments on Draft Source Verification Report (A. Strauss)

<u>Document No.</u>	<u>Date</u>	
145	09/25/86	Revisions Interim Summary Report (Draft) (G. Miller)
146	10/01/86	Ltr: Review Comments on Screening Report Dated August 1986 (T. Potucek)
147	10/29/86	Highlights of September 24, 1986 Mtg. (R. Henckel)
148	11/12/86	Comments on the Draft Physical Chemistry Investigation (A. Strauss)
149	12/10/86	Routing and Transmittal Slip; Ltr. re: Direction of the LUST and Motorola Related Contamination Investigation (T. Potucek)
150	12/23/86	RI/FS Work Plan: Responses to Review Comments - Draft SV Report (G. Miller)
151	12/23/86	RI/FS Work Plan: Responses to Review Comments - Physical Chemistry Investigation (Draft)
152	03/20/87	Preliminary Report; Groundwater Contamination Survey No. 38-26-0858-87 AZ ANG Papago Military Reservation, Phoenix, AZ (K. Daubel)
153	04/16/87	Memo: Highlights of February 12, 1987 Meeting (R. Henckel)
154	05/12/87	Task Specification Long Term Ground-Water Sampling Program for the Motorola Inc. 52nd St. RI/FS (R. Lee)
155	06/01/87	Attachment B to the Remedial Investigation Report for Motorola Inc. June 1987 (Dames & Moore)
156	06/01/87	Attachment A Remedial Investigation Report (Draft) June 1987 (Dames & Moore)
157	06/01/87	Report Test Remedial Investigation Volume I of IV (Dames & Moore)
158	06/01/87	Appendices Remedial Investigation Volume III of IV (Dames & Moore)
159	06/01/87	Appendices Remedial Investigation (Draft) Volume IV of IV (Dames & Moore)
160	06/01/87	Report Feasibility Study (Draft) (Dames & Moore)

<u>Document No.</u>	<u>Date</u>	
161	06/30/87	Report Test Remedial Investigation (Draft) Volume I of IV w/Ltr. re: RI Report/Superfund Project (Dames & Moore)
162	07/14/87	Results of the June, 1987 Ground Water Sampling, 52nd St. RI/FS (D. Hanson)
163	07/23/87	Memo: re: Highlights of the July 14, 1987 Meeting with Agenda and List of Attendees (R. Henckel)
164	07/29/87	Motorola 52nd St. Public Health Assessment Cover Letter (K. Takata)
165	08/05/87	Motorola 52nd St. Draft RI/FS Cover Letter (K. Takata)
166	08/20/87	EPA's Comments on the Draft FS Report (A. Strauss)
167	08/24/87	Ltr. re: Review Comments, Motorola 52nd St. FS (Draft) Report (June 1987) (S. Navarro)
168	09/01/87	Risk Characterization Review of the Motorola 52nd St. Feasibility Study (S. Engländer, N. Petersen)
169	09/18/87	Comments on Motorola 52nd St. F/S Report (J. Anders)
170	10/06/87	Completed Comments on Review of the Remedial Investigation Report Plus Major Recommendations (J. Anderson)
171	10/06/87	Highlights of the September 9, 1987 TSC Meeting (R. Henckel)
172	10/15/87	ADWR Comments on the Motorola 52nd St. Draft Remedial Investigation Report (R. Henckel)
173	(none)	Computation of Population Served
174	(none)	Draft Communication Strategies for Site Proposed to Drop from the NPL (H. Hadlock, A. Kaswan)
175	05/02/88	Health Assessment for Motorola 52nd Street Facility (ATSDR)
176	05/24/88	Draft Remedial Action Plan, Motorola 52nd Street (Dames & Moore)
177	05/26/88	Ltr: Comments on Newsletter #6 (Robert C. Anderson, P.E.)

178	07/03/88	Ltr: Additional Comments on Newsletters #1 through #5 (Robert C. Anderson, P.E.)
179	07/11/88	Transcript: Motorola 52nd Street Site, Remedial Action Plan, Public Hearing (Paul H. Landsman, RPR Court Reporter)
180	07/18/88	Ltr: List of Concerns Regarding Motorola 52nd Street Site (Pamela E. Swift, Chairwoman, Toxic Waste Investigative Group, Inc.)
181	07/25/88	Ltr: re: Proposed Remedial Action Plan (RAP) of Motorola, Inc. (Matthew R. Berens for Heron, Burchette, Ruckert and Rothwell) Letter Report-East High School Property by Water Resources Associates, Inc., enclosed.
182	07/27/88	Ltr: re: Motorola 52nd Street Site Remedial Action Plan-A late Comment (James J. Lemmon, R.G. at the Urban Research Association.)
183	09/12/88	Report: Work Product A-Task Assignment Number 13, Contract Number 2207-000000-3-3-DR-7084 (Health Risk Assessment by ADHS)

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APPENDIX B

MAPS

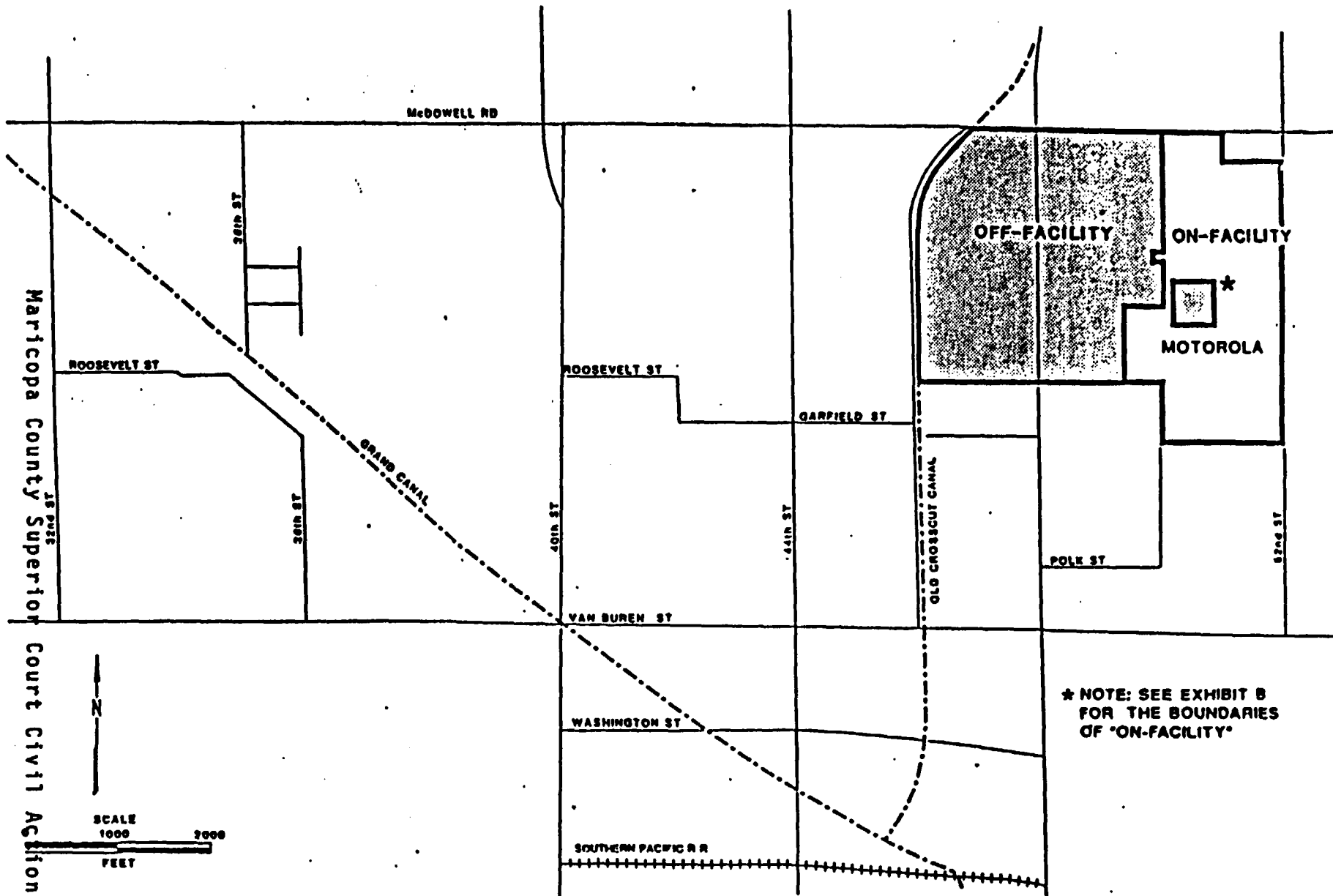
for

MOTOROLA 52ND STREET FACILITY

PHOENIX, ARIZONA

Maricopa County Superior Court Civil Action No. _____

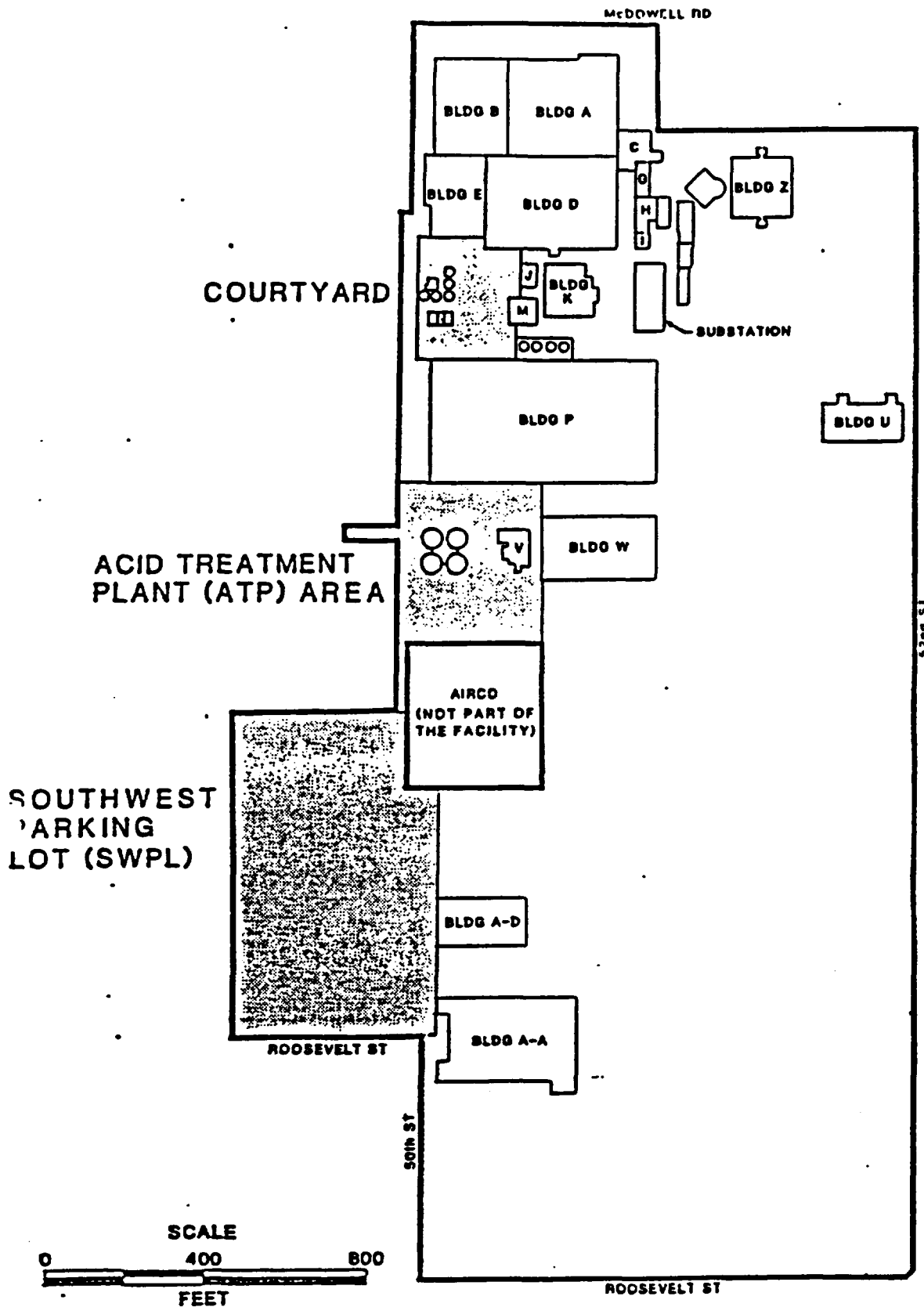
CV 89-16807



BOUNDARIES OF THE OPERABLE UNIT

Exhibit A
(Appendix B)

CV 89-16807



FACILITY PLAN
MOTOROLA 32nd STREET PLANT
 Maricopa County Superior Court Division No. 6-007
 Exhibit B
 (Appendix B)

APPENDIX C

WORK TO BE PERFORMED

C1.0 GENERAL

C1.1 Work to be Performed

As defined by Arizona's Letter of Determination (LOD) and further defined pursuant to this Consent Order, Motorola shall perform all work necessary to implement this Operable Unit (OU). All design and construction obligations of this Paragraph, through and including the obligations imposed by Subparagraph C1.4, shall be effective upon signature of this Consent Order by Motorola and Arizona.

C1.2 Schedule for Work

All work shall be performed by qualified employees or contractors of Motorola in accordance with the schedule established in Subparagraph C1.4 below. (Except where noted otherwise, all time intervals referred to in the schedule are calendar days; however, should a deadline fall on a weekend or a Federal or State of Arizona holiday and/or a Motorola recognized holiday, the deadline shall be construed to continue to the next business day.)

1
2 C1.3 Requirements for the Work

3
4 C1.3.1 The Work consists of:

5
6 (1) The design, construction, operation (to include routine
7 monitoring), and maintenance of a groundwater extraction,
8 conveyance, and treatment system (new 750 gpm groundwater
9 treatment plant) to hydraulically contain groundwater
10 contamination by volatile organic compounds from the facility
11 to the east bank of the Old Crosscut Canal. A zone of capture
12 will be established by pumping from wells at the Old Crosscut
13 Canal. Extracted groundwater will be conveyed to the Motorola
14 52nd Street Plant for treatment to meet federal, state, and
15 local standards. The design and operation of the groundwater
16 extraction system shall also have a beneficial impact on the
17 quality of groundwater within the bedrock.

18
19 (2) The design for expansion of the existing pilot treatment plant
20 (PTP) and an on-facility groundwater extraction well system
21 and construction, operation, and maintenance of the expanded
22 PTP and well system to extract, convey, and treat groundwater
23 to reduce or eliminate contaminant migration. All extracted
24 groundwater shall be treated to meet federal, state, and local
25 standards.

26
27 (3) The design, construction, and operation of on-facility soil
28 gas extraction/treatment systems consisting of, at a minimum,

1 a sufficient number of extraction wells to extract and treat
2 soil gas throughout the thickness of the unsaturated zone
3 until volatile organic compounds (VOC's) concentrations are
4 reduced to levels that stabilize at minimal concentrations of
5 recovery, or are so low as to render extraction uneconomical
6 as agreed to by Arizona with respect to recovery and treatment
7 of VOC's by other methods. The on-facility areas to undergo
8 soil gas extraction/treatment are the Courtyard Area and
9 adjacent areas on 50th Street, the Acid Treatment Plant, and
10 the Southwest Parking Lot.

11
12 Soil gas extraction wells will be designed to penetrate within
13 approximately four (4) feet of the water table. The design of
14 the soil gas extraction and treatment system will optimize
15 VOC recovery, based on initial testing and/or pilot projects,
16 in each of the three (3) areas mentioned above. Air emissions
17 from the soil gas treatment system shall meet federal, state,
18 and local standards.

- 19
20 (4) Motorola may initiate design/construction before or during
21 Arizona's review.
22

23 C1.3.2 Hydraulic Gradient
24

25 Motorola shall maintain the "zone of capture" by insuring that
26 an inwardly directed hydraulic gradient is maintained from the
27 edges of the "zone of capture" to the extraction wells.
28

1 Arizona during review of the conceptual design, shall make a
2 determination as to the effectiveness of the design in
3 establishing and maintaining a "zone of capture" which will
4 reduce/eliminate contaminant migration.
5

6 C1.3.3 Cleanup Level
7

8 The function of the Operable Unit is to perform interim
9 cleanup of soil and groundwater contamination while preventing
10 contaminant migration. Therefore, as stated in the 1988
11 Letter of Determination, no level of cleanup has been
12 established for the aquifer at the Site.
13

14 C1.3.4 Treatment Plant Discharges
15

16 (1) All water from the groundwater extraction and treatment
17 systems will be beneficially used at the Motorola 52nd
18 Street facility consistent with the Groundwater Code
19 including applicable area management plans. Motorola
20 shall use Best Available Technologies for treatment of
21 volatile organic compounds (VOC's).
22

23 During start-up activities, extracted water conveyed to
24 and from the treatment plant will be tested on a
25 frequency as provided for in the Operations and
26 Maintenance Plan submitted in accordance with
27 Subparagraph C1.4.5(6) and C1.4.
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(2) During operations, the treatment plant discharges shall meet federal, state, and local standards for treatment plant discharge levels, based on a sampling schedule to be presented in the Operation and Maintenance Plan. The Operation and Maintenance Plan developed by Motorola pursuant to Subparagraph C1.4.5(6) shall include compliance monitoring programs to demonstrate continued compliance with the requirements of Subparagraph C1.3.4(3).

(3) The total concentration of VOC's, as determined by EPA's standard methods 601 and 602, shall not exceed 100 ppb in discharges of treated groundwater. Total Toxic Organics (TTO's) concentrations in the waste water discharged from the Motorola facility shall not exceed the average value measured (186 ppb) during the three (3) years prior to the entry of this Consent Order. Should the three (3) year average be exceeded for three (3) consecutive months, the total concentration of VOC's in the treated ground water must not exceed 50 ppb VOC's, of which there must be less than 5 ppb TCE. Any measurable noncompliance with these levels shall be reported orally to the Department within two (2) days of discovery. A written submission shall also be provided within five (5) days. This submission shall include a description of the noncompliance and its cause; the period of noncompliance, including the dates and times, corrective actions taken

1 or to be taken, and the anticipated time the
2 noncompliance is expected to continue; and steps taken or
3 planned to reduce, eliminate, and prevent reoccurrence of
4 the noncompliance.
5

6
7 (4) Air stripping, carbon adsorption, and/or soil gas control
8 (or equivalent technologies with Arizona approval) will
9 be used to remove VOC's from contaminated soils and
10 groundwater to meet applicable federal and state
11 standards. The air stripping towers will be equipped with
12 air emission controls as needed to meet Maricopa County
13 requirements, including Rule 320, Section 302 and any
14 other applicable provisions of the Arizona Implementation
15 Plan under the Clean Air Act.

16
17 (5) Motorola will make available to Arizona in each Progress
18 Report, pursuant to Section 12.0, all data and analyses
19 for the Operable Unit received during the reporting
20 period.

21 C1.4 Schedule for the Work

22
23 C1.4.1 Statement of Work

24
25 Within fifteen (15) days after this Consent Order is entered,
26 Motorola shall submit a statement of work (SOW) for the
27 Operable Unit including a (90% design) for the expansion of
28

1 the existing pilot treatment plant. The SOW shall include
2 operational design concepts for extraction wells, the
3 collection system, expansion of the existing groundwater
4 treatment plant, the new 750 gpm groundwater treatment plant,
5 and the soil gas extraction and treatment systems. The SOW
6 shall also identify all applicable local, state, and federal
7 permit requirements.
8

9
10 C1.4.2 Review of Statement of Work

11 Arizona shall review and approve/disapprove the Statement of
12 Work within fourteen (14) days after receipt of the SOW.
13 Revisions to the SOW will be subject to the same fourteen (14)
14 day review process. Revisions to the Operable Unit design
15 concept shall be reviewed and approved by the Department prior
16 to incorporation into the project plans and specifications.
17 Any dispute with respect to the SOW or revisions shall be
18 subject to the dispute resolution procedures.
19

20
21 C1.4.3 Individual Design Packages

22 After Arizona's decision to approve/disapprove the SOW,
23 Motorola Inc. shall submit for review individual design
24 packages for the Operable Unit (30% final design). The
25 individual design packages shall include, but not be limited
26 to, the following:
27
28

(1) Location of groundwater extraction wells and collection system (to include pumping rates for all wells);

(2) Major equipment list for the new groundwater treatment plant;

(3) Piping/layout Plan;

(4) Easements;

(5) Piping and flow diagrams for treatment plant;

(6) Ancillary equipment (substations, etc.); and

(7) Soil gas system layout;

C1.4.4 Review of Individual Design Packages

Arizona shall review and approve/disapprove each individual design package package within fourteen (14) days of submittal.

C1.4.5 Ninety (90) Percent Plans and Specifications

Within 180 days after entry of the Consent Order with the court, Motorola shall submit project plans and specifications which are 90% complete. These shall include, but not be limited to:

- (1) Design analysis;
- (2) Piping and instrument diagram for the groundwater and soil gas treatment plants;
- (3) Specifications for the groundwater and soil gas treatment plants and groundwater extraction system sufficient to comply with the treatment plant discharge requirements and "zone of capture" requirements of Appendix C, Sub-paragraphs C1.3.4 and C1.3.2;
- (4) Worker Health and Safety Plan as described in Appendix C, Paragraph C2.0;
- (5) Quality Assurance/Quality Control (QA/QC) Plan as described in Appendix C, Paragraph C3.0;
- (6) Draft Operation and Maintenance Plan including, but not limited to:
 - (a) Recommended frequency of water level measurements and water quality testing for groundwater extraction and monitoring wells as well as treated water. These shall include separate schedules for startup and routine operations.

1
2 (b) Proposed decision making process and criteria for
3 operating the groundwater extraction wells and the
4 treatment system(s).

5
6 (c) Recommended frequency for testing of air emissions
7 during startup and routine operations.

8
9 (7) Construction schedule (including Right-of-Way (ROW)
10 acquisition, etc.) and phasing.

11
12 (8) End use of treated water.

13 C1.4.6 Review of Plans and Specifications

14
15 Arizona shall review and approve/disapprove the project plans
16 and specifications within thirty (30) days of submittal.

17
18 C1.4.7 Begin Construction

19
20 Within sixty (60) days of Arizona's decision to approve the
21 plans and specifications Motorola shall begin the bidding
22 process for construction.
23
24
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1
2 C1.4.8 Completion of Construction

3
4 Upon completion of construction, Motorola shall submit as-
5 built plans and specifications and Final Operation and
6 Maintenance Plans to Arizona.

7
8 C1.4.9 Startup Activities

9
10 Motorola shall commence startup activities upon completion of
11 construction. Subject to modifications allowed by this
12 Consent Order, Motorola shall complete start-up testing of all
13 facility components necessary for routine operation of the OU
14 within sixty (60) days after completion of construction
15 activities. The start-up testing period shall not be more
16 than sixty (60) days after the completion of construction
17 activities. "Start-up" for the purposes of this Consent
18 Order, is defined as a time period to conduct activities
19 necessary to identify operational problems, test the operation
20 and efficiency of all equipment, and make necessary
21 corrections and adjustments. The primary purpose of start-up,
22 however, is not one of treatment/containment as prescribed in
23 this Consent Order.

24
25 C1.4.10 Begin Routine Operation

26
27 Within sixty (60) days of completion of construction, Motorola
28 shall begin and thereafter maintain routine operation

activities in accordance with the approved Operation and Maintenance Plan.

C1.4.11 Deficiencies

If Arizona disapproves of any plan submitted by Motorola, such disapproval shall be accompanied by a list of deficiencies. Within fifteen (15) days Motorola shall make a resubmission. Such resubmissions to cure the deficiencies cited shall include the list of deficiencies and the specific changes made to cure the deficiencies.

C2.0 WORKER HEALTH AND SAFETY PLAN

The Worker Health and Safety Plan that Motorola is required to submit pursuant to Paragraph 8.0 of this Consent Order shall satisfy the requirements of 29 CFR Part 1910; Occupational Safety and Health Guidance for Hazardous Waste Site Activities, October 1985 (DHH 5 NIOSH) Publication No. 85-115; and EPA's Standard Operation Safety Guides.

3.0 QUALITY ASSURANCE/QUALITY CONTROL

C3.1 Submittal of QA/QC Plan

Motorola shall submit to Arizona for approval, at the same time as it submits the final draft design documents in accordance with

1 Appendix C, Paragraph C1.4, a Quality Assurance/Quality Control
2 (QA/QC) Plan for Remedial Construction activities. The Remedial
3 Construction QA/QC Plan shall, where applicable, be prepared in
4 accordance with the current U.S. Environmental Protection Agency
5 publication, "Interim Guidance and Specifications for Preparing
6 Quality Assurance Project Plans," QAMS-005/80 and subsequent
7 amendments to such guideline. Additionally, the Remedial Action
8 QA/QC Plan shall include elements necessary for the implementation
9 of trial test(s) of the pumping, collection, and treatment system
10 used as part of the Work. The Remedial Action QA/QC Plan shall
11 include a description of the procedures that shall be used to
12 verify that the pumping, collection, and treatment processes are
13 operating within acceptable design specification limits. Upon
14 approval and notice by Arizona to Motorola, Motorola shall
15 implement the Remedial Action QA/QC Plan.
16

17
18 C3.2 Utilize QA/QC Plan

19
20 Motorola shall utilize QA/QC procedures in accordance with the
21 approved QA/QC plans submitted pursuant to this Consent Order, and
22 shall utilize standard Arizona chain of custody procedures, as
23 documented in "Quality Assurance Project Plan for the Arizona
24 Department of Environmental Quality (12/88)", and any published
25 revisions for all sample collection and analysis activities. In
26 order to provide quality assurance and maintain quality control
27 regarding all samples collected pursuant to this Consent Order,
28 Motorola shall:

- (1) Ensure that all contracts with laboratories utilized by Motorola for analysis of samples taken pursuant to this Consent Order provide for access by Arizona personnel and authorized representatives to assure the accuracy of laboratory results related to the Work.
- (2) Ensure that laboratories utilized by Motorola for analysis of samples taken pursuant to this Consent Order perform all analyses according to the Quality Assurance Project Plan (QAPP) for the Arizona Department of Environmental Quality and/or EPA Methods deemed satisfactory by Arizona.
- (3) Ensure that all laboratories utilized by Motorola for analysis of samples taken pursuant to this Consent Order participate in an EPA equivalent QA/QC program. As part of the QA/QC program and upon request by Arizona, such laboratories shall perform at their own expense analyses of samples provided by Arizona to demonstrate the quality of each laboratory's data. Arizona may provide to each laboratory a maximum of four samples per year per analytical combination (e.g., four aqueous samples for analysis by gas chromatography/mass spectrometry, four soil/sediment samples for analysis by gas chromatography/mass spectrometry).

1 C4.0 PROJECT COORDINATOR
2

3 Upon execution of this Consent Order, Arizona and Motorola shall
4 each designate a Project Coordinator to monitor the progress of the
5 Work and to coordinate communication between Arizona and Motorola.
6

7 C4.1 Authority for Performance
8

9 Arizona's Project Coordinator shall have authority on behalf of
10 Arizona to ensure that the Work is performed in accordance with all
11 applicable statutes, regulations, and this Consent Order.
12

13 C4.2 Authority to Suspend Work
14

15 Arizona's Project Coordinator shall also have the authority to
16 require a cessation of the performance of the Work or a portion of
17 the Work that in the opinion of Arizona's Department Project
18 Coordinator, may present or contribute to an endangerment to public
19 health, welfare, or the environment or cause or threaten to cause
20 the release of hazardous substances.
21

22 C4.3 Time Extension Following Suspension of Work
23

24 (1) In the event Arizona's Project Coordinator suspends the Work
25 or a portion of the Work for any of the reasons set forth in
26 Subparagraph C4.2 and these reasons are not due to acts or
27 omissions of Motorola or its contractor(s) not required by
28

1 this Consent Order, the parties may extend the compliance
2 schedule of this Consent Order for a period of time, not to
3 exceed the length of the suspension. Should Motorola desire
4 an additional extension to the compliance schedule, Motorola
5 shall propose and Arizona shall determine the length of any
6 such additional extension. A disagreement over the length of
7 such an additional extension shall be deemed a dispute and
8 subject to the provisions of Section 18.0 (Dispute
9 Resolution).

10
11 (2) In the event Arizona's Project Coordinator suspends the Work
12 or a portion of the Work for any of the reasons set forth in
13 Subparagraph C4.2 and these reasons are due to acts or
14 omissions of Motorola or its contractor(s) not required by
15 this Consent Order, then any extension of the compliance
16 schedule shall be at Arizona's discretion, subject to dispute
17 resolution procedures.

18
19
20 C4.4 Absence of Arizona's Project Coordinator

21 The absence of Arizona's Project Coordinator from the Site shall
22 not be cause for stoppage of the Work.

23
24 C4.5 Assignment of Representatives

25
26 Motorola's Project Coordinator and Arizona's Project Coordinator
27 may each assign other representatives, including contractors, to
28

1 serve as a Site Representative for oversight of performance of
2 daily operations during remedial activities.
3

4
5 C4.6 Limitations of Authority

6 The Project Coordinators do not have the authority to modify in any
7 way the terms of this Consent Order.
8

9
10 C4.7 Change of Project Coordinators

11 Arizona and Motorola may change their respective Project
12 Coordinators by notifying the other party in writing at least seven
13 (7) calendar days prior to the change.
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